LB
3218
N72N52
1922a

Class

Book

TWENTY-FOURTH ANNUAL REPORT OF THE SUPERINTENDENT OF SCHOOLS 1921-1922

CONSTRUCTION AND MAINTENANCE

BOARD OF EDUCATION
THE CITY OF NEW YORK

Twenty-fourth Annual Report

of the

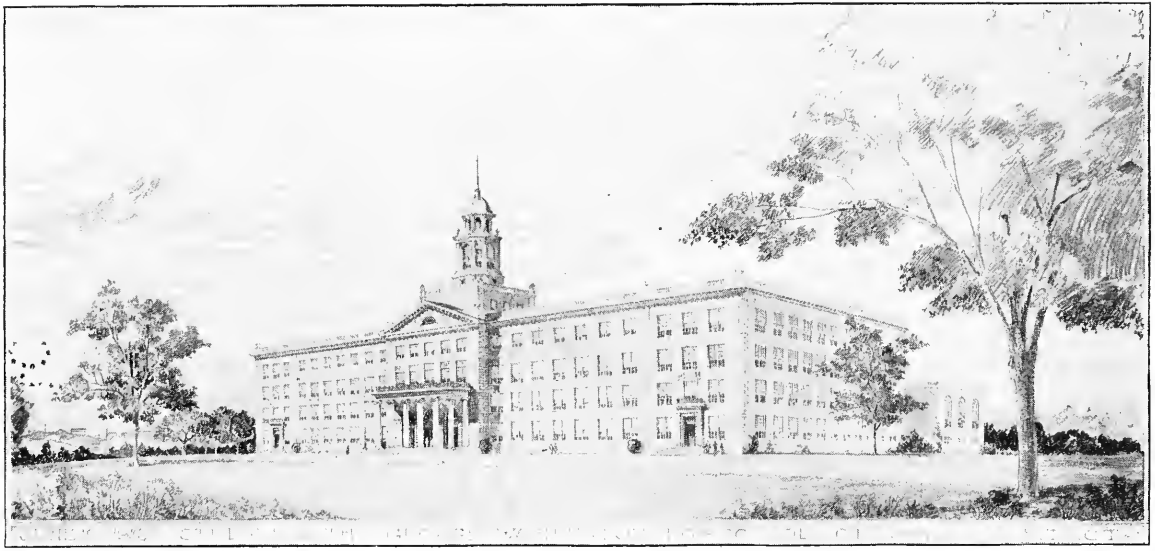
Superintendent *of* Schools

1921-1922

REPORT ON
CONSTRUCTION
and
MAINTENANCE

PRESENTED TO THE BOARD OF EDUCATION
OCTOBER 25, 1922

LIBRARY OF CONGRESS
RECEIVED
MAR 15 1923
DOCUMENTS DIVISION



Frontispiece

NEW GEORGE WASHINGTON HIGH SCHOOL WHICH WILL ACCOMMODATE ABOUT 3,500 STUDENTS, TO BE ERECTED ON A PORTION OF THE SITE OF OLD FORT GEORGE, AUDUBON AVENUE OPPOSITE 192D AND 193RD STREETS, BOROUGH OF MANHATTAN.

LB3218
.N72N52
1922a

BOARD OF EDUCATION
THE CITY OF NEW YORK

GEORGE J. RYAN, PRESIDENT
HARRY B. CHAMBERS, VICE-PRESIDENT

Borough of Manhattan
MRS. EMMA L. MURRAY M. SAMUEL STERN

Borough of Brooklyn
DR. JOHN A. FERGUSON ARTHUR S. SOMERS

Borough of The Bronx
HARRY B. CHAMBERS

Borough of Queens
GEORGE J. RYAN

Borough of Richmond
JOHN E. BOWE

WILLIAM L. ETTINGER
SUPERINTENDENT OF SCHOOLS

C. B. J. SNYDER
SUPERINTENDENT OF SCHOOL BUILDINGS

TABLE OF CONTENTS

	PAGE
INTRODUCTION	7
Bureau of Construction and Maintenance	13
Means adopted by the Board of Education to provide for the construction and maintenance of buildings and property	13
PLAN OF ORGANIZATION	13
Assignment of employees	14
Appropriation for maintenance	14
Work being performed	16
Replacement, pupils' toilets	16
Removal of transom windows	17
Need for repairs due to intensive use	18
Contracts awarded 1921	18
New building contracts let, 1914-1922	19
Basis for 1922 computation	19
PLANNING OF A SCHOOL BUILDING	22
Unit of requirement, classrooms	26
Number of units in buildings	26
Advantages of standardization	27
TYPE OF PLANS TO MEET UNUSUAL CONDITIONS	27
H type	27
Annex 72, Manhattan	29
Manhattan Trade School	32
School for Deaf	34
New York Training School for Teachers	44
STANDARD TYPES OF PLANS	49
Type A, 2000-pupil capacity	50
Enlarged to 3000-pupil capacity	55
New type U, same capacity	56
Schedule of comparison	61
Summary of advantages	62
HIGH SCHOOLS	62
Small type	63
Thomas Jefferson High School, Brooklyn	64
Community use	65
Gymnasiums and swimming pools	68
Schedule of accommodations	72
Contract cost	72
Julia Richman High, Manhattan	73
Gymnasium Building	74
New Utrecht High, Brooklyn	75
George Washington High, Manhattan	75
Girl's Commercial High, Brooklyn	79
Special Activities	80

PAGE

PROCEDURE IN THE PREPARATION IN THE SCHOOL BUILDING BUDGET, LETTING OF CONTRACTS, SUGGESTIONS 85
School sites as a part of the city plan 95
Abandoned school sites to be retained for playgrounds 96
Survey of requirements by Board of Education 97
Delay in approval of plans 97
Draughtsman variation in terms of employment 97
New building, hall of the Board 94
Fire prevention work 91
Heating and ventilation 92
Artificial illumination 89

FOREWORD

August 1, 1922.

TO THE BOARD OF EDUCATION

LADIES AND GENTLEMEN:

I beg leave to submit the report made by Mr. C. B. J. Snyder, Superintendent of the Bureau of Construction and Maintenance.

I believe that the report will be of interest not only to the members of the Board of Education, but also to the general public, inasmuch as it reviews the work of a bureau that is charged with the task of providing on an unprecedented scale, school accommodations for our ever-increasing army of children. The magnitude as well as the technical character of the work so admirably conducted by Superintendent Snyder is set forth in detail in order that all interested in this phase of education service may have a clear understanding of the manner in which the Board of Education and its professional staff have attempted to discharge their obligations.

The conditions that have operated to produce the present congestion in our schools are well known. The assumption by the preceding political administration that because of the adoption of a double-session type of school organization, the problem of greatest urgency was the reconstruction of existing buildings rather than the erection of new ones in rapidly growing areas; the ban placed upon labor and material by the War Priority Board during the war; the scarcity of labor and of material which practically brought building generally to a standstill during the period of readjustment following the close of the war; and finally, the high cost of building, due to corrupt capital and labor combinations revealed by the Lockwood Committee, made it impossible for the Board of Education to make any great headway.

Fortunately, these obstacles have been removed. The complementary reports of Superintendent Snyder, which is submitted herewith, and of Associate Superintendent Shallow, on New School Buildings and Sites, which is printed separately, will give the reader a picture of the comprehensive building program that is being so generously financed by the present city

administration and so ably carried on by the present Board of Education under the general supervision of Commissioner Dr. John A. Ferguson, Chairman of the Committee on Buildings and Sites, a worthy successor to former Commissioner Frank D. Wilsey, whose service in a similar capacity set a high standard of excellence.

There has been much criticism of the long time required to plan and erect school buildings. In the accompanying report Superintendent Snyder sets forth the procedure that must be followed by the Board of Education in requesting funds, in making plans, in letting contracts, and various related matters. For example, you will find listed fifty distinctly marked steps that must be taken before the contractor is finally notified to begin work on a new building. Superintendent Snyder points out that while the procedure is involved it is not without merit. Four important points should be noted in connection with the present method: (1) that publicity and opportunity for consideration are assured at every point in the entire proceedings; (2) that each step is required either by statute or ordinance or is the result of years of experience in the transaction of public business and thus has become a fixed practice; (3) that accuracy is absolutely essential at all points, since an error at any stage would have serious results; (4) that the award of contracts must be made to the lowest financially responsible bidder.

Nevertheless, it is generally conceded that there is too much red tape involved in the present method and it is imperative in the interests of efficient business adminsiration that the Legislature modify present Charter requirements and clothe the Board of Education with full power to construct buildings, upon the due certification of its Superintendent of Buildings that all code provisions have been met, without incurring the delay that is incident to present practice in accordance with which the approval of the city departments is involved. Note especially the anomalous condition with reference to the lighting of school buildings. Despite the earnest cooperation of all parties concerned, the division of authority to which Superintendent Snyder refers and upon which I commented a year ago, has resulted in

a failure to provide our schools with the artificial light needed. The work of our evening schools and also our regular day schools suffers much from inadequate lighting. The conclusion is inevitable that no agency other than the Department of Education can insure the satisfactory installation, repair, and maintenance of lighting facilities. Full control of this very important matter ought to be vested in this Department.

In an earnest effort to speed the erection of buildings, the Board of Superintendents has co-operated with Superintendent Snyder in working out a standard type of classroom unit and equipment. The result has been not only the installation of a high type of classroom unit and equipment, but also a great reduction in the time and the cost of getting out plans.

The merits of the various types of school buildings designed by Superintendent Snyder and adopted generally throughout the country are set forth at some length. Superintendent Snyder is convinced that the new "U" type of building planned to accommodate 56 or 69 classrooms respectively, has merits that entitle it to rank as a marked advance in school planning.

The work of eliminating fire hazards is being carried on with commendable diligence. Reports are constantly received from the Bureau of Fire Prevention as to results of inspections. With reference to each school visited reports are made as to changes necessary to prevent the outbreak and spread of fire, and to facilitate egress in case of fire or panic. Such reports are referred to the Superintendent of the Bureau of Construction and Maintenance, and to the Superintendent of the Bureau of Plant Operation, for immediate action or budgetary request. If one were to judge of the safety of our schools by the total number of the reported violations, one would be filled with fears that are entirely unwarranted. The great majority of such violations refer to minor matters, such as exit signs and lights, metal shields for radiators, installation of wire screens around gas jets, installation of fireproof cases for raffia and paints, installation of self-closing metal covered doors, all of which are important and deserve immediate consideration. The removal of these violations cannot be accomplished overnight, even at the

urgent behest of the Bureau of Fire Prevention. The ultimate elimination of such violations will result only from financial ability and careful planning, extending over a period of years. But meanwhile, should any school be shown to be a menace to the health or the safety of our children, the public may rest assured that the Superintendent of Schools and the Board of Education will close the school forthwith.

But the existence of such violations does not prove that our schools are fire-traps. Indeed, these adverse reports are indicative of the vigilance which we exercise in safeguarding our children. The real danger arises not from such minor violations in fireproof school buildings in which the resident children are thoroughly familiar with exit facilities and physical conditions generally, but in the older structures inherited from past generations which force of circumstaces compels us to occupy. Iu such ancient buildings every effort has been made by the installation of fire-escapes, and above all by the vigilance of the principal, the teachers, and the custodian, to insure the safety of the children. When one considers that the average parent has no choice as to what public school his children shall attend, it is incumbent upon school and city authorities to spend every dollar necessary not only to insure reasonable safety, but, indeed, the absolute safety of every child.

I am in hearty agreement with Superintendent Snyder's remarks and recommendations concerning the selection of school sites. As I have stated in the foreword to Associate Superintendent Shallow's report:

> "Our enormous population which, when immigration is unrestricted, literally spills over adjacent territory in every possible direction, tends to seek areas which are attractive because of the low cost of housing, the cost and the character of transportation, and the proximity of such areas to places of employment. Such shifting of population, which means that some sections of the city have partially vacant school buildings while others are suffering from excessive congestion, because of the lack of such buildings, demands not only that our future building program be developed on a comprehensive scale, but also in terms of the best possible forecast as to the future growth of our city."

At the present writing, the upper floors of the Hall of the Board of Education are being rebuilt to offset the damage caused by the fire of four years ago. Although the renovation will cost approximately one-quarter million dollars, the additional accommodations supplied will be negligible. Many of our bureaus and administrative heads must still be housed in quarters remote from the central administration building. As Superintendent Snyder's report indicates, even at the time of the erection of the building which was intended to accommodate the administrative offices of the School Board for the Boroughs of Manhattan and The Bronx, it was recognized that the facilities provided would be inadequate to house the administrative staff after the consolidation of the five boroughs. The situation has become worse year by year and the need of additional accommodations is most urgent. The suggestion made that possibly the Board of Education might secure some unused portion of the courthouse site is an excellent one, and deserves immediate consideration. My recommendation that the site at present occupied by Public School 18, on 51st street, between Lexington and Park avenues, be used, is an alternative one that I respectfully present. The present school could be closed without detriment to the children at present occupying it. The location of the site is central and the adjacent property is devoted to structures of beauty and permanence. I strongly recommend that you give serious consideration to securing an appropriate site and to the erection thereon of an administration building that will not only serve properly to house the staff of the Department, but will also serve as a splendid monument to the foresight and business efficiency of the Board of Education responsible for its planning and completion.

In conclusion, I am sure I express your sentiments as well as my own when I state I was more than delighted that Superintendent Snyder was finally persuaded to withdraw his application for retirement. His long service has been characterized by a devotion to duty and an ever increasing technical skill that have made his work a blessing to our children and a credit to our community. I trust that through the enlargement of his

professional staff he will be relieved in large part of the tremendous burden he has borne so manfully, so that for many years to come the system will have the benefit of his mature judgment and his artistic skill.

Respectfully submitted,

WILLIAM L. ETTINGER,

Superintendent of Schools.

July 8, 1922.

DR. WILLIAM L. ETTINGER

Superintendent of Schools

DEAR DR. ETTINGER:

I beg leave to submit the following report on the organization and work of this bureau in connection with the preparation of plans and specifications for the construction, equipment and maintenance of new school buildings, together with comments and suggestions on various related matters as requested by you.

Very truly yours,

C. B. J. SNYDER,

Superintendent of School Buildings.

BUREAU OF CONSTRUCTION AND MAINTENANCE

Means Adopted by the Board of Education to Provide for the Construction and Maintenance of Buildings and Property.

Organization of Bureau.—In order to make proper provision for the planning, construction and equipment of the new school buildings, and also the safety and repair of school property after it is put into use, the Board of Education, through the Superintendent of Schools as Chief Executive of the Board, provided for and developed a Bureau second to none in its plan of organization and in the technical skill and accomplishments of its personnel.

The Bureau has as its head a Superintendent of School Buildings who, together with his six Deputy Superintendents, are all Registered Architects.

The plan of organization consists of a main business office which includes the main drafting rooms, and five borough branch offices.

To each office one Deputy Superintendent of School Buildings is assigned.

Plans and specifications for practically all the new buildings and their equipment are prepared in the main office, in which there are separate sections for Sanitary, Heating and Ventilating, Electric and Furniture work, each with a chief in charge.

Thus, each branch is placed under the immediate direction of an expert.

After the contracts for the construction and equipment for all new buildings and additions have been prepared by the main office and the bids opened by the Superintendent of School Buildings, award made by the Board of Education, sureties approved and contracts duly executed, the immediate responsibility for carrying forward of the work, rests upon the Deputy Superintendent of the Borough in which it is located, acting in conjunction with the main office.

The Deputy Superintendents are also charged with the preparation of plans and specifications for such new construction work as may be assigned to them by the Superintendent, as well

as for all maintenance—except that of heating repairs—and the supervision of the performance of the work together with that of certain mechanics who are employed.

The following schedule shows quite clearly the present make-up of the force of the Bureau together with its apportionment to the various offices or divisions. In numbers the Bureau is larger than ever before, due to the carrying out of the vast school building program now under way.

EMPLOYEES

BUREAU OF CONSTRUCTION & MAINTENANCE

Office or Division	Administration	Drafting	Inspection	Mechanical	Total
MAIN OFFICE.					
	21	...	3 (New Bldgs.) (All Boros.)	..	24
Gen. Drafting	4	149	..	..	153
Sanitary	2	...	..	..	2
Heating	2	35	3	..	40
Electric	3	14	..	..	17
BOROUGH OF MANHATTAN.					
	6	...	3 (New Bldgs.)	2	11
Sanitary	..	1	4	6	11
Electric	..	...	3	6	9
Furniture	2	4	3	11	20
Repairs	..	1	7	2	10
BOROUGH OF THE BRONX.					
	4	3	19 (9 New Bldgs.) (10 Repair)	7	33
BOROUGH OF BROOKLYN.					
	9	10	27 (10 New Bldgs.) (17 Repair)	27	73
BOROUGH OF QUEENS.					
	5	7	13 (4 New Bldgs.) (9 Repair)	6	31
BOROUGH OF RICHMOND.					
	3	1	7 (2 New Bldgs.) (5 Repair)	..	11
TOTAL	61	225	92	67	445

MAINTENANCE OF BUILDINGS AND EQUIPMENT.—The maintenance of the buildings and premises used for school purposes is a very great task in itself, more especially just now when there is so much work being put forward to remedy the conditions brought about through inadequate appropriations for years past. Moreover, not only must worn-out equipment be replaced, but there must be repaired the millions of dollars of damage done through freezing and chilling of the buildings and equipment

due to the severe weather conditions of the winter of 1917-1918, when the coal famine made it necessary at one time to close more than half of the school buildings in the Borough of Brooklyn.

The following graph illustrates the fact that appropriations from 1907 up to 1919 did not bear any relation to the accumulated cost of buildings and equipment as it should have done.

GRAPH C

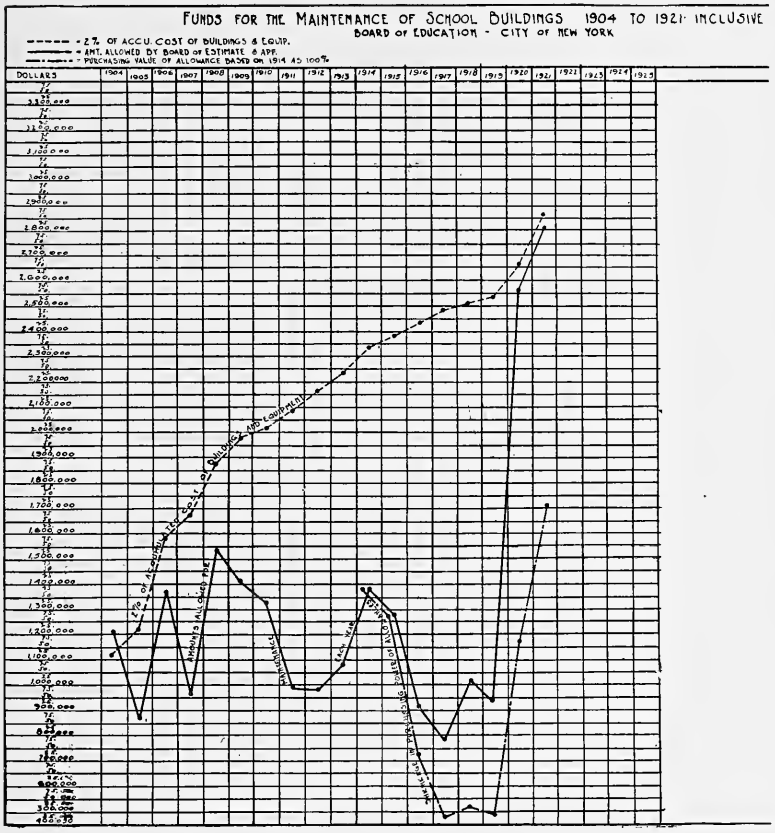


Fig. 1.

THIS GRAPH SHOWS THE GREAT DISCREPANCY BETWEEN WHAT REAL ESTATE MEN CONSIDER A REASONABLE EXPENDITURE FOR MAINTENANCE OF REAL ESTATE (2% OF ACCUMULATED COST) AND THE ALLOWANCES MADE BY THE BOARD OF ESTIMATE AND APPORTIONMENT FOR THE MAINTENANCE OF SCHOOL BUILDINGS. IT ALSO SHOWS THE PURCHASING VALUE OF THE ALLOWANCE, USING 1914 AS 100%, DUE TO THE INCREASED COST OF MATERIAL AND LABOR.

THE PURCHASING POWER OF THE DOLLAR ACCORDING TO THE U. S. BUREAU OF LABOR STATISTICS AND THE NATIONAL CONFERENCE BOARD IS:

1914—1.00	1918— .51
1915— .98	1919— .51
1916— .80	1920— .45
1917— .57	1921— .61

This discrepancy was first recognized in 1920, when a large appropriation was made. However, because of the shrinkage in the purchasing power of the dollar, due to after war conditions, the volume of actual work which could be purchased with the appropriations was very small indeed.

The graph shows the improvement which took place in this respect during 1921, and again during the present year.

The poor state of disrepair into which the buildings have fallen because of inadequate appropriations is illustrated by some items of the work more recently taken up in the Borough of Manhattan as given by the Deputy Superintendent in charge.

In 1921 there were 56 stairways renovated; 86 pupils' toilet enclosures and fixtures overhauled, renovated and painted; 38 buildings upon which new roofs were placed; 1,670 classrooms cleaned, painted and varnished; as well as 20,436 windows repaired and painted.

During the present year the repair, painting and renovation will include 65 stairways; 44 pupils' toilets; 4,287 classrooms; 6,804 windows; 5 new buildings and equipment for pupils' toilets; remodeling of 22 pupils' toilets; 10 new water-supply installations; 3,100 drinking fountain guards, and 18 additions to present electric lighting systems. Even this extensive list will be increased before the close of the year.

Similar work is progressing in each of the other boroughs, but it will be several years before all of the buildings can possibly be brought up to the proper standards of repair and sanitation.

The present condition of pupils' toilets in old buildings is one of the things which has aroused considerable discussion.

The standard by which these old fixtures are judged today is that which has been developed and used in both public and private work during the last few years. The best present practice demands large open spaces, with an abundance of natural light, aided by white tile or enameled brick walls and white tile floors; watercloset fixtures even for the kindergarten toilet of white porcelain, urinals for the boys' toilets of the same material, but

of the low-down type so that the floors may be drained into the receptor at the base.

The adoption of this type of installation in the new school buildings has resulted in an insistent demand that it be quickly extended to all of the older schools to replace the present toilet ranges and urinals which are objectionable, although they represented the best of practice at the time of installation.

Their removal and replacement with modern equipment should be undertaken systematically, to the end that the present obsolete fixtures should be replaced within a given number of years.

A similar plan should be followed in the removal of all transom bars and sash in exterior windows giving light to rooms used for purposes of instruction.

Experiments have been carried out in various buildings, which prove most conclusively that such removals may be done without any great expense. It is only necessary to remove the upper sash and transom, make some slight repairs to the window frames and trim, then to install a new upper sash of a size to include the space formerly occupied by the transom bar and transom, and hang on heavy pulleys with the required counterweights.

The result of such change is amazing in its increase of natural daylight. Rooms originally poorly illuminated at once become light and cheerful.

There are three bad features usually inherent in transoms for school rooms: they are difficult to reach and are therefore left dirty; they are difficult to shade, so the shade material or paper is tacked or pasted on; they are difficult to keep in good working order, with the result that they are usually kept securely closed, so that ventilation by such means is impossible.

Venetian blinds are equally objectionable, and should likewise be entirely removed from our schools.

There is also some other work which should be taken up year by year until replacement is complete, but these are the two items of primary importance.

Some have argued that within a year or so all of the schools could be brought up to a proper state of repair, with the result that there would be no need for large annual appropriations.

Such a conception is wholly erroneous, for with the ever-growing intensive use of the buildings—day and night through the entire year, and by numbers 50% greater than originally planned for it should be perfectly clear that there must be a corresponding increase in the wear and tear of both buildings and equipment.

In other words, if a new floor will last a given number of years under normal use of a single session day school, then its period of service will be only one-half that of normal if the school be used for double session and evening school, or if in any other way the service be doubled.

There may possibly be some portion of the building which would not be subject more or less to this same rule, but the only part that at the moment would seem to be exempt is the roof, when not used for playground purposes.

The total of the repair budget would now be truly appalling had there been an adherence all of these years to the older type of construction, such as wood floor and roof beams and girders, with wood lath and stud partitions.

Fortunately, quite a large percentage of the buildings are now of an entirely different form of construction, steel and terra cotta or concrete having replaced the wood formerly used, The school buildings erected during the last three years are practically reinforced concrete throughout, a form of construction which should be continued as an alternate with steel, leaving market conditions to decide which shall be actually used.

Volume of Work.—An index of the large volume of work which for instance was handled by the Bureau during 1921 may be taken from the number of contracts for which plans and specifications were prepared, advertised and contracts awarded by the Board.

CORPORATE STOCK

	Number of Contracts	Amount
General Construction	22	$7,406,918.00
Sanitary	27	698,396.00
Heating and Ventilating	5	276,239.00
Temperature Regulation	4	30,397.00
Electric	24	409,382.00
Furniture	159	634,011.32
Fire Protection	2	5,990.00
Total,	243	$9,461,333.32

MAINTENANCE—Payable from Tax Levy or Revenue Bond Funds.

Alterations	439	$1,307,708.85
Sanitary	117	270,005.00
Heating	11	79,689.00
Electric	67	211,681.75
Furniture	53	241,967.03
Glass	4	22,514.00
Total,	*691	$2,133,565.63

*NOTE: This represents the number of contracts actually approved and executed during the year 1921, but as a matter of fact there were 780 operations on which bids were opened and contracts awarded by the Board of Education before December 31, 1921, contracts for the other 89 awards not having been finally approved and executed until the early part of 1922.

In addition to the above, awards were made on non-advertised work for which competitive bids had been received, on which the estimated cost was less than $1,000, as follows:

5,008 wards averaging 227.14 each.

There were also 7,459 awards for emergency work, those items which had to be done on non-competitive orders ,averaging $42.87 each.

This number, large as it is, will be greatly exceeded during the present year.

As a partial answer to the question which is frequently asked as to why there are a less number of school buildings than are required to meet the demand, the following graph will illustrate that from 1907 to 1918 there was an apparent lack of a fixed policy in the building of schools so as to at least keep up with the needs of the school population.

· BOARD OF EDUCATION ·

· BUREAU OF CONSTRUCTION AND MAINTENANCE ·

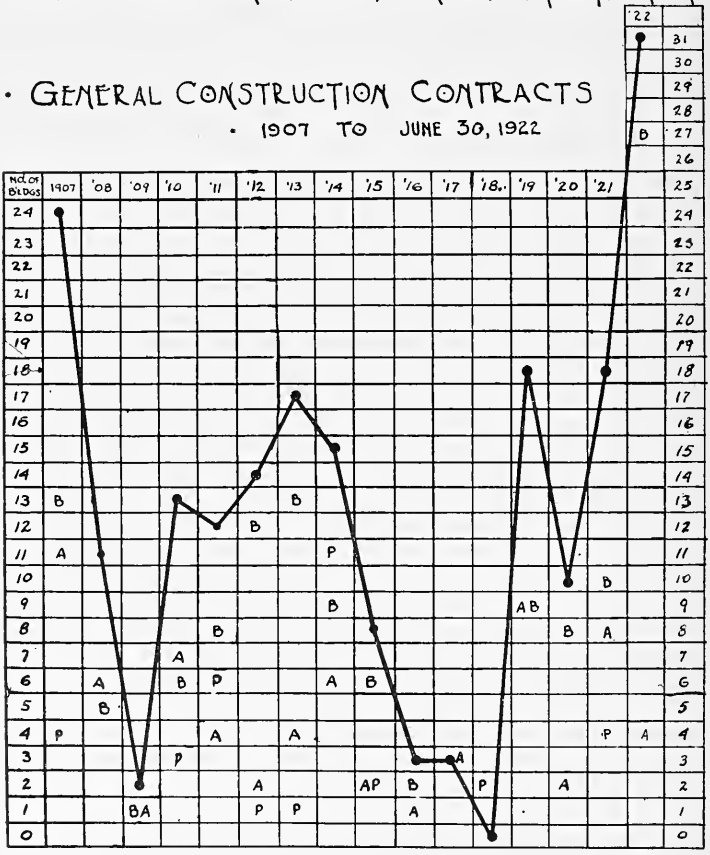


Fig. 2.

THIS GRAPH INDICATES THE PROGRESS MADE IN LETTING CONTRACTS FOR NEW BUILDINGS AND ADDITIONS TO EXISTING BUILDINGS; PROVIDING ADDITIONAL SCHOOL ACCOMMODATIONS IN 1907 TO THAT WHICH IS ANTICIPATED FOR 1922.

B indicates—New Buildings.
A " —Additions.
P " —Portable Buildings, which, however, are not included in totals.

1922 includes—Award of contracts,	7	New Bldgs.,	1 Addition
Advertised at this date,	2	"	"
Ready to advertise,	4	"	"
Plans and specifications complete,	14	"	" 3 Additions
Total,	27		4

This number will be largely increased by the work to be prepared during the latter part of the year.

War conditions brought operations to the lowest point in 1918, and made it impossible to make a start until 1919.

Good progress was then made despite adverse labor conditions and a rising material and labor market, but the combined influence of the two finally brought the letting of contracts to a practical stop in 1920.

A gradual improvement in conditions in 1921 allowed this work to again proceed, so that the number of new buildings and additions put under contract rose to the point reached in 1919, although the output would have been greater for either of these years had there been quarters available in which an increased number of draughtsmen could have been placed.

The accuracy of this statement is shown by that which is being accomplished during the present year. As a result of the purchase of a large new loft building in Brooklyn we moved out of our cramped, unsanitary rooms on December 31st, to the temporary occupation of one of the unfinished floors in the new building. The necessary partition and sanitary work for the draughting rooms and offices were put in place on the two upper floors somewhat later. With the improvement in space new men were added to the force, and as all worked under improved conditions even in the unfinished floor, the result has been most gratifying.

The output for 1922 cannot of course be included in the graph as final until the close of the year, some six months away, but in order to indicate what has been accomplished the 1922 column is covered by a dotted line, based upon the following:

CONTRACTS LET: N. B. 67 Bk., 102 Qns., 54 Qns., 72 Qns., T. J. H. H., Bk., 135 Bk., 188 Bk., 80 Man..... 8

Also portable or temporary buildings as follows: P. S. 5 and 68, The Bronx; 99 and 105, Bk.; 42, 103 and 104, Queens; and 30 and 36, Richmond..... 9

NOW ADVERTISED: N. B. 19 Qns., 69 Qns..... 2

READY TO ADVERTISE: Add. 57 Man., Add. 130 Man., N. B. 139 Man., N. B. 189 Bk..... 4

READY FOR ADVER. WITHIN 30 DAYS: Add. *72* Man., N. B., *J. R. H. S.*, Man., N. B. *63* Bx., N. B. *65* Bx., N. B. *69* Bx., N. B. *161 B*k., N. B. *192* Bk., Add. *16* Bk., N. B. *N. U. H. S.*, Bk., N. B. *70* Qns., New Bldgs. (2) for Parental School, Qns., *Add.* Curtis H. S., Rich., 64 Bx., 193 Bk., 190 Bk., 121 Man..... 17
Also 9 temporary buildings at various locations..... 9

Total..... 49

Plans for the following jobs are in various stages of preparation or are not yet started, but they constitute only a part of the work which can be turned out by the Bureau during the remainder of the year:

PLANS UNDER WAY: P. S. 56 and George Washington H. S., Manhattan; P. S. 66 and 67, The Bronx; P. S. 6 Addition, Brooklyn; Richmond Hill H. S., Queens.

PLANS NOT YET STARTED: P. S. 60, School for the Deaf and New York Training School for Teachers, Manhattan; Addition to P. S. 6, Addition to P. S. 33 and new P. S. 70, The Bronx; New building near P. S. 63, new P. S. 117, Addition to P. S. 142 and Addition to Erasmus Hall H. S., Brooklyn.

PLANNING OF A SCHOOL BUILDING

The efficient planning of a school building, in common with all other structures, demands that the purpose of use and occupation should be clearly understood.

Therefore, the Board of Superintendents after a careful survey of the needs of any particular neighborhood recommends to the Board of Education a plan of organization for the proposed school in which is given the grades and special activities together with a statement as to the number of boys or girls, or both, to be accommodated.

Recommendations are also made as to the provision that must be made for any special facilities, as for instance, roof playgrounds, swimming pools, or other essential matters.

In order to obtain a uniformity of treatment and economize in time and energy, a prolonged study of proposed new buildings and equipment was made by the present Board of Education sitting as a Committee of the Whole, the Board of Superintend-

ents and the Superintendent of School Buildings, with the result that an agreement was reached early in 1918 as to certain requirements which were termed standards.

The unit of requirement taken was that of a single classroom.

This was worked out in accordance with the seating arrangements. In other words, the room was planned *around* the desks and seats. Space was then provided for a wardrobe, a book closet, a closet for library books, and a teacher's locker. A special cabinet was placed beneath the blackboard chalk rail at the outer front corner of the room and designed for the reception of chalk, erasers, rulers, pencils, etc., so as to keep them separate from the books, and under the immediate eye of the teacher.

A shelf for plants, supported upon strong iron brackets, was placed in front of the window between the radiators.

Each room therefore required a space 28 ft. in length by 24 ft. in width, with the wardrobe placed on the inner or corridor side.

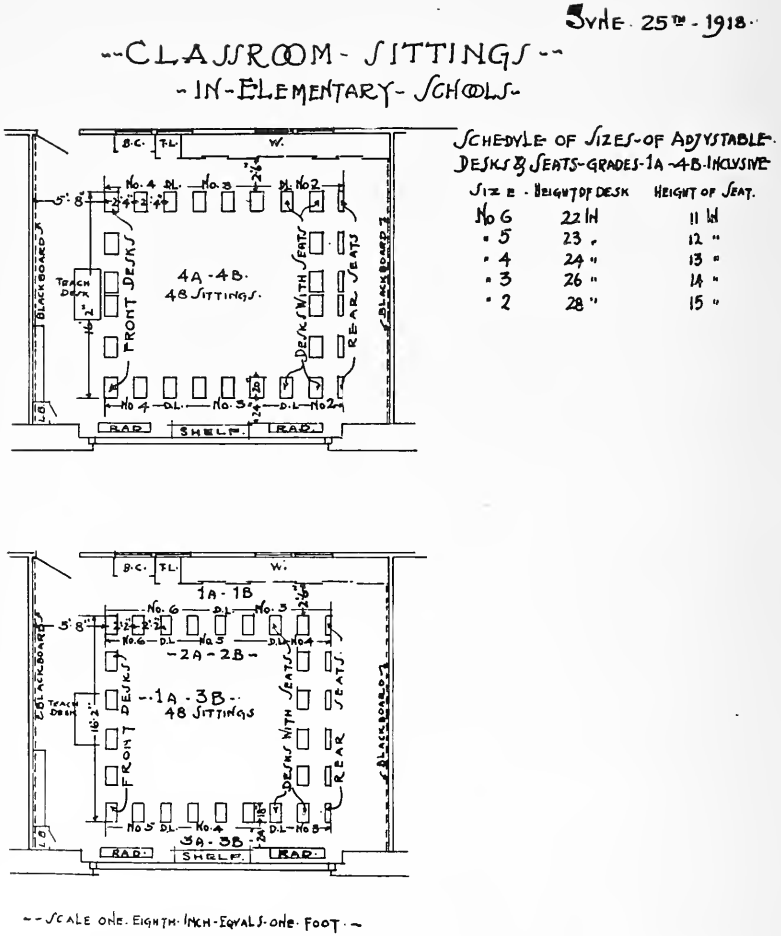
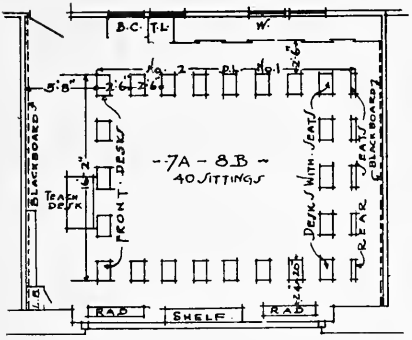


Fig. 3—CLASSROOM SITTINGS IN ELEMENTARY SCHOOLS

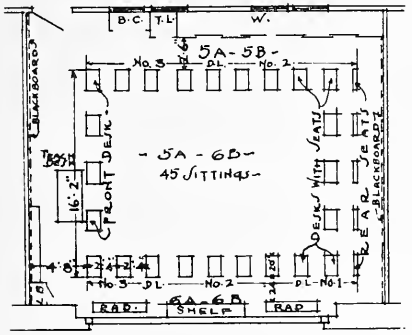
JUNE. 25TH 1918

-- CLASSROOM - SITTINGS --
- IN. ELEMENTARY - SCHOOLS -



SCHEDULE OF SIZES OF ADJUSTABLE DESKS & SEATS. GRADES 5A-8B INCLUSIVE

SIZE	HEIGHT OF DESK.	HEIGHT OF SEAT
No. 3	26 IN	14 IN.
" 2	28 "	15 "
" 1	30 "	16 "



- SCALE ONE-EIGHTH INCH EQUALS ONE FOOT -

REV 4/23/21 L.B E.GUNTER

Fig. 4—CLASSROOM SITTINGS IN ELEMENTARY SCHOOLS

It was then ascertained through similar planning that certain activities could be well accommodated in the area represented by one and one-half classroom units, others in two classroom units.

These classroom units were then worked into floor plans designed to provide for schools varying in size to meet the requirements.

It was found, for instance, that it would be economical in floor space and arrangement to plan buildings with 12, 16, 26, 36 or 48 classroom units with auditoriums and playgrounds.

This plan was a guide to the Board of Superintendents in laying out their organizations. Flexibility in the placing of special activities requiring more than one classroom unit was insured through a complete revision of the heating and ventilation systems, in accordance with which the heat and vent flues are placed in the space over the corridor ceilings instead of between the classrooms as had been, and is now the almost universal practice elsewhere. Moreover, this innovation not only gives a distinct gain in floor space and in cost of construction, but this arrangement is of special value as providing means whereby alterations in the size of rooms may be easily, quickly and cheaply made to meet any changes in school organization.

The convenience of the Superintendents, both as individuals and as a Board, has been very successfully served by the production of the plans on a small scale, showing clearly the classroom units available in each type of building but without construction features. This device enables them, through a use of the standards which have been adopted as to requirements for each activity to more readily plan any organization desired.

The purpose, therefore, in fixing a standard classroom unit and of several types of buildings known as A-48, B-36, C-26, etc., was not to make a plan of each type from which there would be no deviation, but rather to facilitate such deviation in organization as might seem wise.

The resultant economy in time and energy so far as the Superintendents are concerned has been very great, and this in turn has been reflected even to a greater degree in costs and in

the shortening of the period of time required to produce a set of plans for a building.

A set of plans complete requires from 150 to 220 separate sheets of drawings. Standardization as thus applied has made it possible to reproduce many plans by a lithographic process, on tracing cloth, using as many sheets of a set as may be found to apply to the job in hand. Changes are made when required, if found to be economically possible, otherwise new drawings are prepared.

Because of the invariable differences in street grades, elevations and subsurface conditions new drawings are always required for the lower floor, cellar and foundations, and the plot plan with necessary changes in all elevations and sections, but even with these necessary changes there is a great saving in time, expense and the avoidance of error.

This method of standardization and preparation of work which has been extended so as to include specifications, has now been in use for the last three years and has proven so successful that men are being specially trained in its application.

TYPE OF PLANS TO MEET UNUSUAL CONDITIONS

The street plan of the old City of New York has been the subject of severe condemnation because of the very few north and south thoroughfares to handle the ever-increasing traffic. Practically each of these avenues has its surface or elevated car lines which together with the vehicular traffic create such a volume of noise as to render necessary the development of a plan which would make it possible to place a school building at some point between the avenues upon a not overlarge site, and at the same time obtain needed quiet together with unobstructed light and air.

This condition applied particularly to the built-up sections, but its solution through the design of what is termed the "H" type of school building which the writer presented in 1896 provided a means whereby the various Boards of Education have been free to place its buildings near the centre of a block and away from the heavy traffic lines on the avenues.

Fig. 5—ONE OF THE TWO COURTYARDS FACING THE STREETS, "H" TYPE OF BUILDING

P. S. 179, 101ST STREET, EAST OF AMSTERDAM AVENUE, MANHATTAN

The plots selected have been from 150 feet to 200 feet in width by the depth of the block from street to street, usually 200 feet.

The side walls are built upon the property lines, thus shutting out noise and unpleasant surroundings, an abundance of light and air being assured by means of the courtyards facing the streets.

Two more buildings of this type, one with 72 classroom units and auditorium, and another with 56 classroom units, auditorium and swimming pool, are now to be added to those already built and in use in the Borough of Manhattan with others to follow in The Bronx and Brooklyn as the need may arise.

Another type is that of the new school building known as annex to P. S. 72, on 104th street and Lexington avenue, developed to meet conditions when a 48 classroom unit building together with an auditorium was required to care for the overcrowding in a densely built up section, due to an increase of school population. In this instance, the increase has arisen through rebuilding and alteration of older quarters so as to accommodate a greater number of families.

The only property obtainable without very great expense and the destruction of many homes is a plot 100 feet wide and 200 feet deep through the block and this, as will be seen by the illustration, is ocupied by houses, practically the only small ones in the entire neighborhood.

Fig. 6.

THE TWO FOUR-STORY AND BASEMENT DWELLINGS AND FOUR TWO-STORY AND ATTIC DWELLINGS ON THE 104TH STREET END OF THE BLOCK, WHICH HAS BEEN ACQUIRED FOR ANNEX TO PUBLIC SCHOOL 72, 104TH STREET, WEST OF LEXINGTON AVENUE, MANHATTAN.

The plan shows that despite the restrictions imposed by the site each of the school rooms and the auditorium, as well as the indoor playroom on the first floor, will receive the requisite amount of light and air.

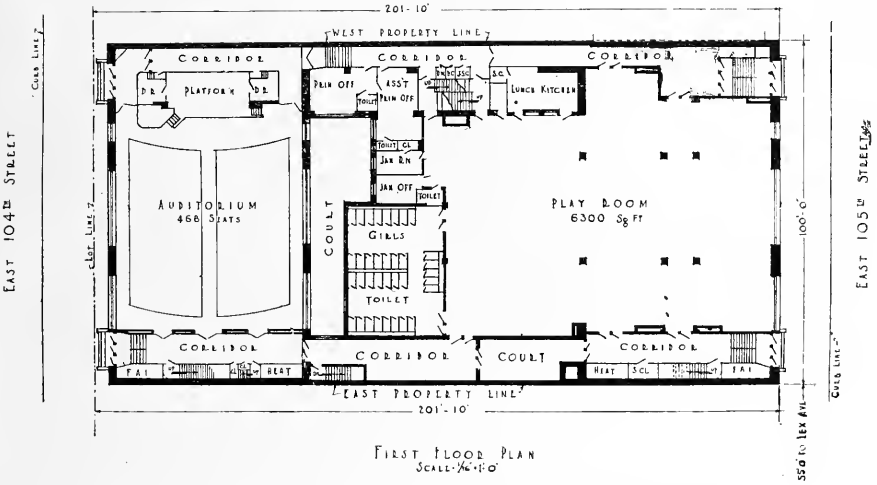


Fig. 7—ANNEX TO PUBLIC SCHOOL 72, MANHATTAN

FIRST FLOOR PLAN SHOWING AUDITORIUM AND INDOOR PLAYROOM

Outdoor play space to the rather remarkable amount of 12,000 square feet, or three-fifths of the entire plot of 20,000 square feet, will be provided on the roof. Toilet, drinking facilities and the enclosure of the entire space overhead as well as at the sides with wire netting renders this playground space usable for practically any purpose.

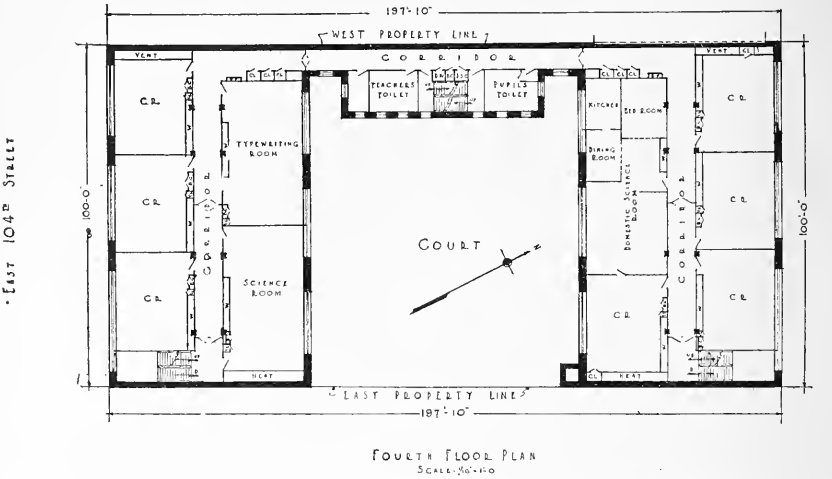


Fig. 8—ANNEX TO PUBLIC SCHOOL 72, MANHATTAN

TYPICAL FLOOR PLAN INDICATING ARRANGEMENT OF CLASSROOMS AND LIGHT COURT

Although in the development of this particular building there has been no departure from the standards so far as classroom units and flexibility of plan is concerned, nevertheless it is not a type which should be used for elementary school purposes except as a last resort. More ample sites permit the development of better types of building.

The history of the eight-story building for the Washington Irving High School at 16th street and Irving place, and of the ten-story building for the Manhattan Trade School for Girls at 22nd street and Lexington avenue, both practically in the heart of the city on plots of the size used by small office buildings, are so well known as to not require repetition.

Fig. 9—MANHATTAN TRADE SCHOOL FOR GIRLS

22ND STREET AND LEXINGTON AVENUE, MANHATTAN

Each presented a distinct problem as to use and location and notwithstanding their restricted area and their height have been highly successful as schools.

Another interesting problem is that presented by the School for the Deaf, now located in an old elementary school building on the north side of 23rd street east of Third avenue, at no great distance from the two schools just noted. The school, built on a small plot and surrounded by six-story buildings was abandoned for elementary school purposes long ago.

Later it was made use of by one school organization after another, pending the construction of new buildings, and finally was used experimentally in the development of a School for the Deaf.

This school has now become such a wonderful success that there is an imperative need for larger and more suitable quarters. Location plays a very important part in the question, for since the pupils come from all parts of the Greater City the school must be central and easily reached.

This most essential requirement is considered as being best met by the present building. Additional property has therefore been acquired at the rear and at one side so that the entire plot will have a frontage of 122 feet extending 197 feet 6 inches through the block to 24th street.

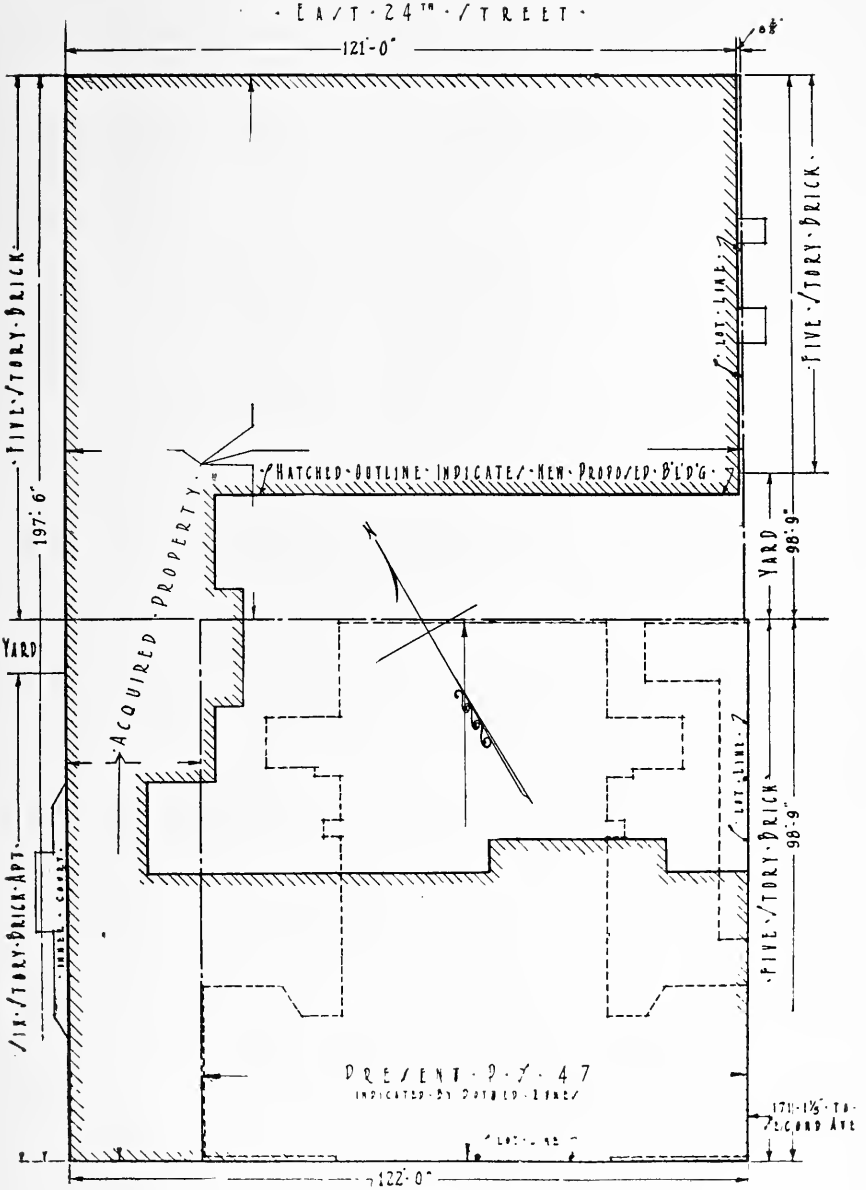


Fig. 10—PLOT PLAN, SCHOOL FOR THE DEAF

Inasmuch as there is no building to which the school could be removed pending the erection of a new structure the present building must be left intact insofar as is possible and continued in use until such a time as the first portion of the new one is ready.

The general situation is shown by the plot plan, whereon is indicated the present building, the new property acquired, and its proposed development.

East 24th street for its entire length from Third to Second Avenues, is a noisy business thoroughfare and can be utilized only so far as the school is concerned for light, air and emergency exits.

The noise, because of the nature of the school, will not prove detrimental.

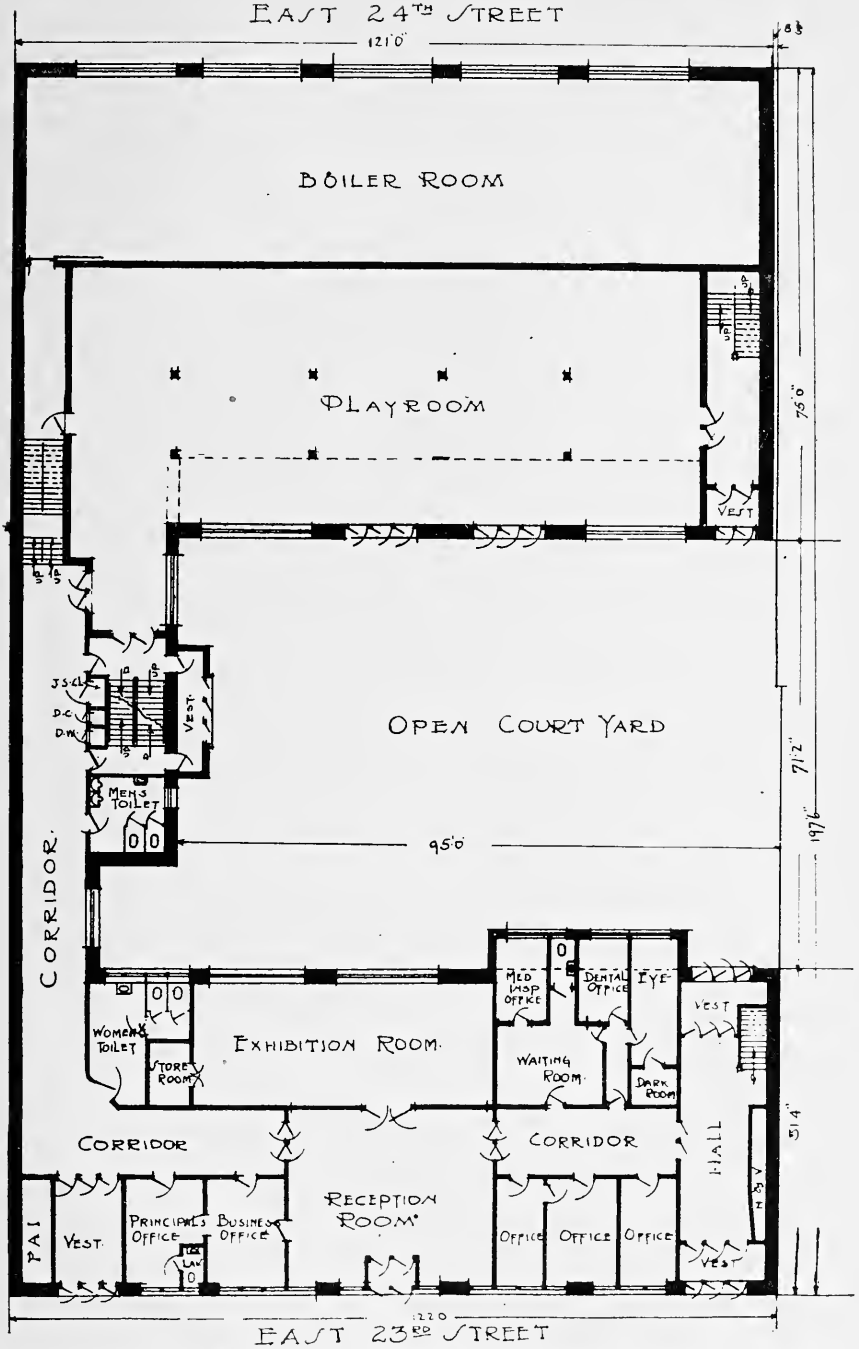


Fig. 11—ENTRANCE PLAN ON EAST 23RD STREET, SCHOOL FOR THE DEAF

The main entrances for all purposes will therefore be placed on East 23d street, which being wide, proves very suitable for the purpose.

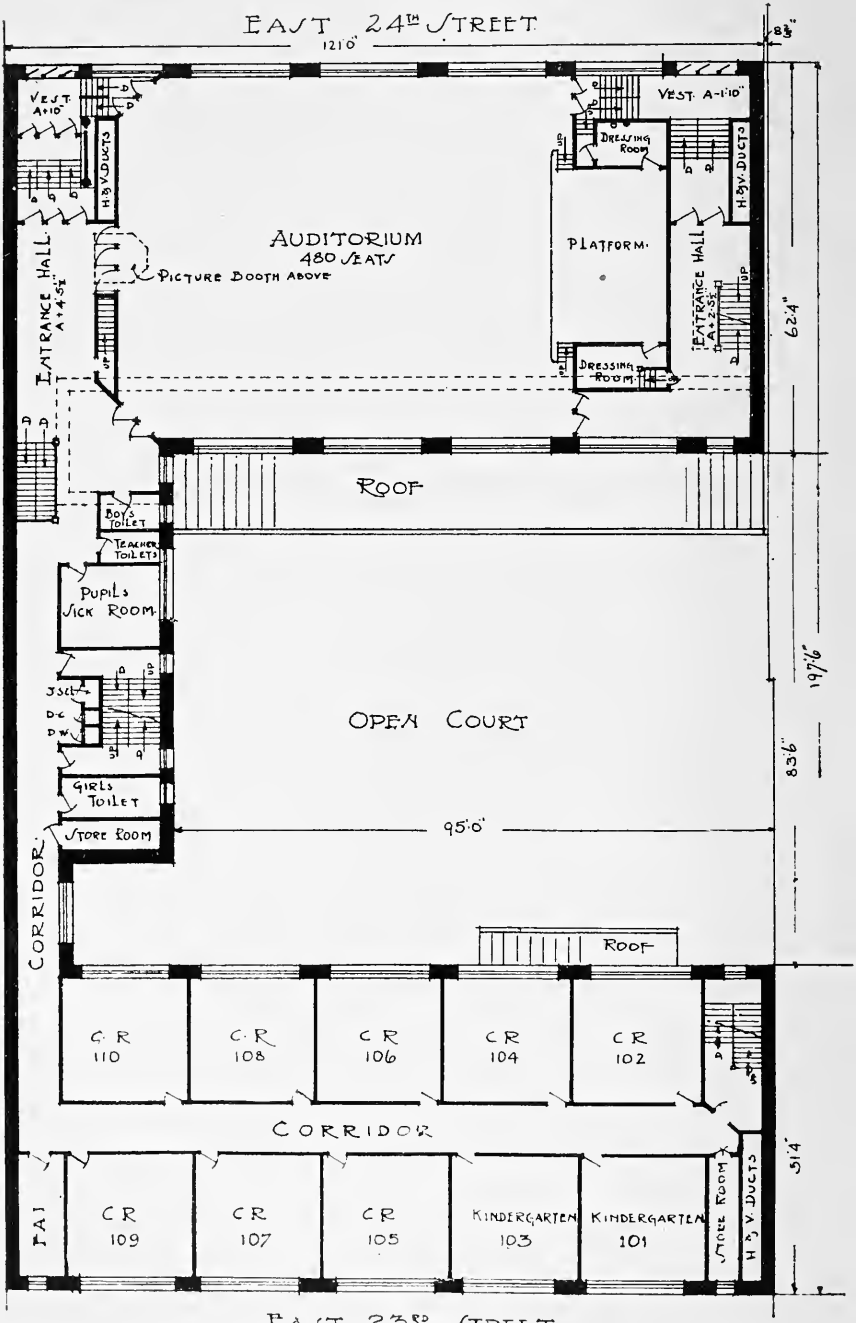


Fig. 12—FIRST FLOOR, SCHOOL FOR THE DEAF

The development of the plan has been controlled very largely by the peculiarities of the situation, but it is thought will prove highly satisfactory, since with the removal of the present building there will be space for both indoor and outdoor play for the 600 pupils that are to be accommodated. As many of the pupils are escorted to and from the school by parents, relatives or others, a reception room has therefore been provided just at the entrance.

Leading from this is a wide corridor, giving ready access to the administration offices and the main building, including the auditorium. This corridor will be about nine feet higher than the main entrance due to there being that much difference in the street grades. This difference in levels is offset by making the main entrance and administration offices with a lesser story height, and the utilization of the difference by adding it to that of the auditorium, so that the second-story level will be uniform throughout. This plan has afforded a most excellent opportunity for locating the exhibition room at a point where it is easily accessible to all visitors as well as for the school itself.

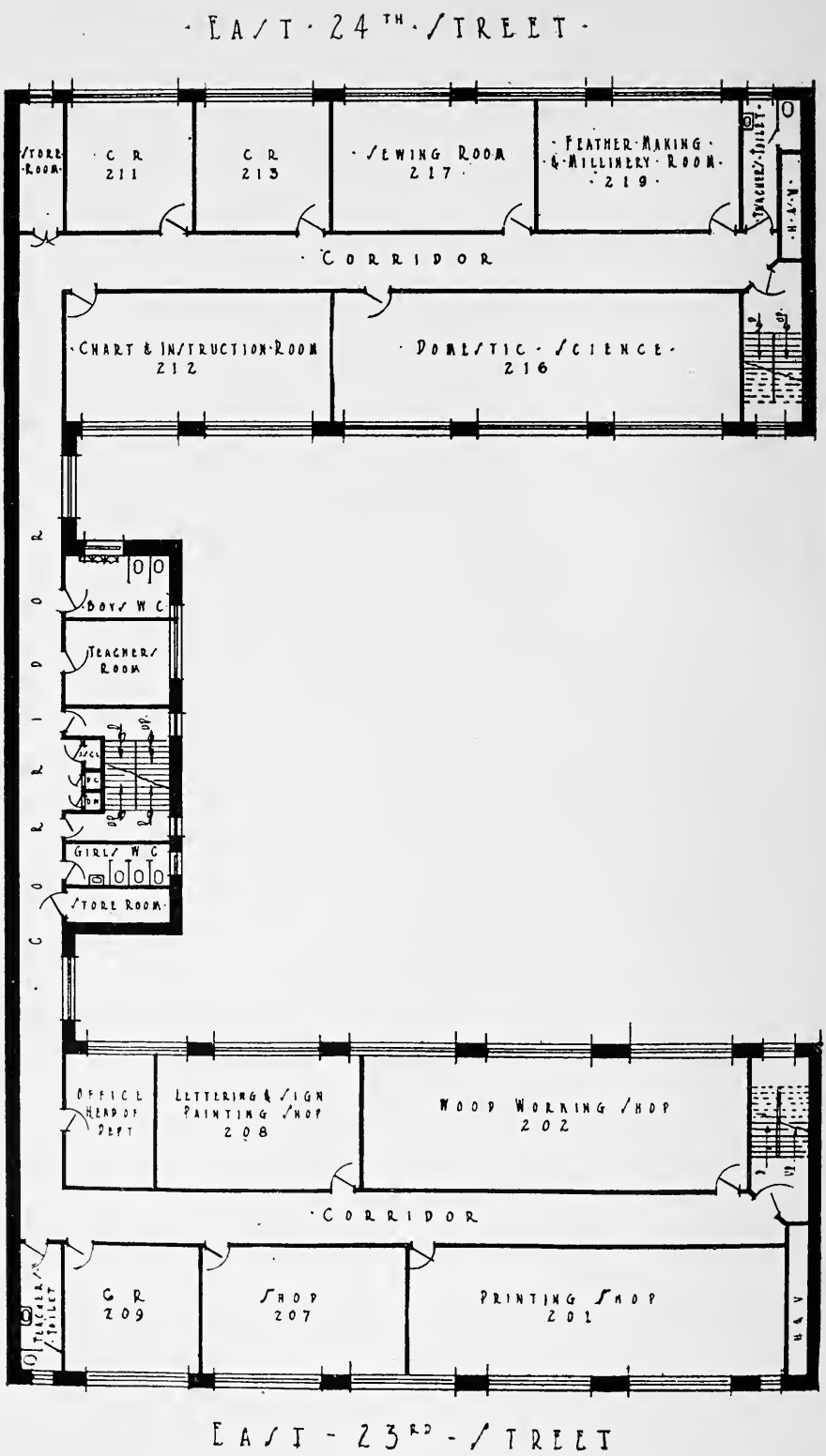


Fig. 13—SECOND FLOOR PLAN, SCHOOL FOR THE DEAF

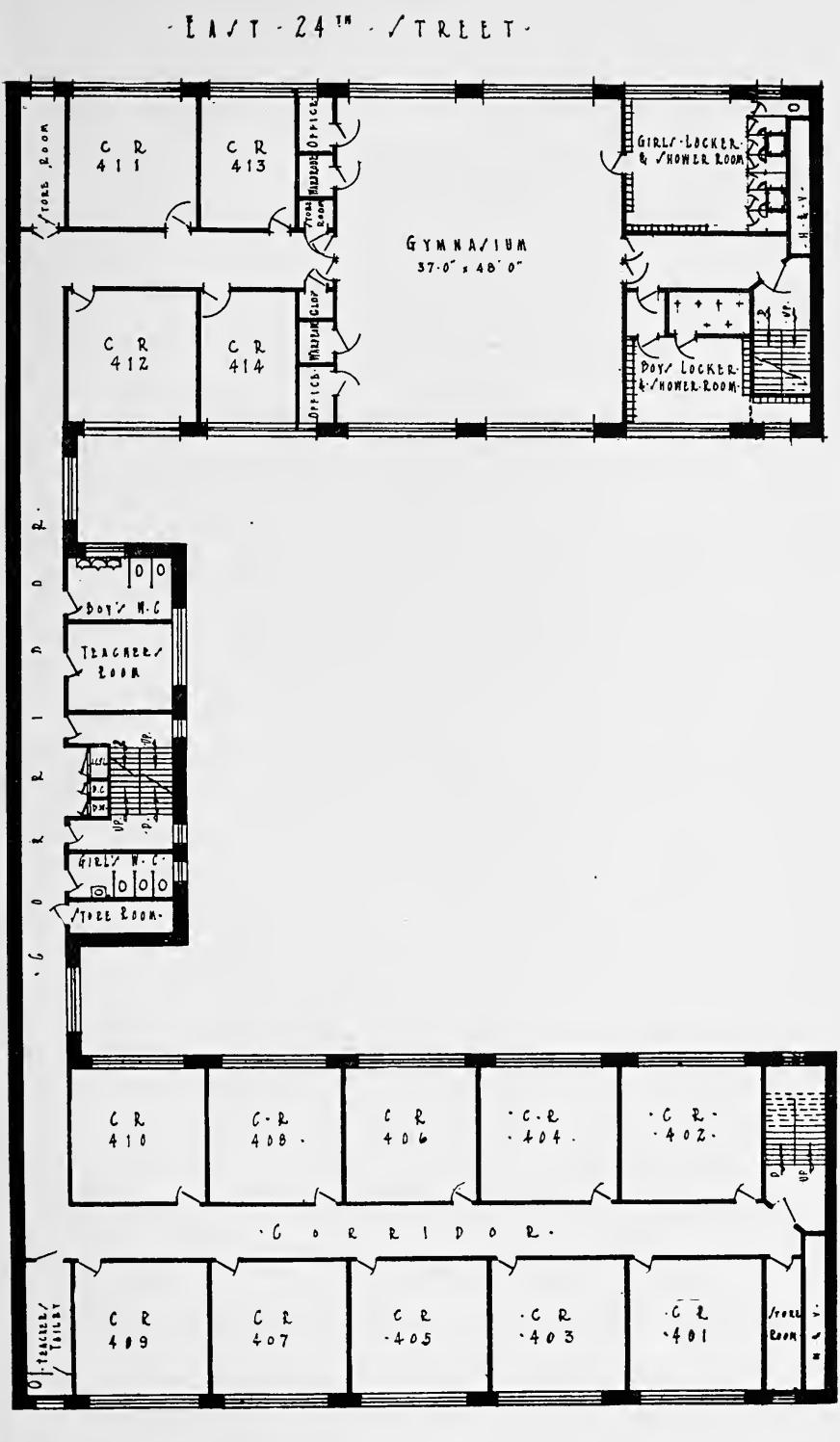


Fig. 14—FOURTH FLOOR PLAN, SCHOOL FOR THE DEAF

The illustration given herewith indicates quite clearly that which is contemplated. There is every reason to believe that upon completion nothing will be found wanting except such a setting of lawn and trees and flowers, as would be natural to expect were the school placed in an outlying section.

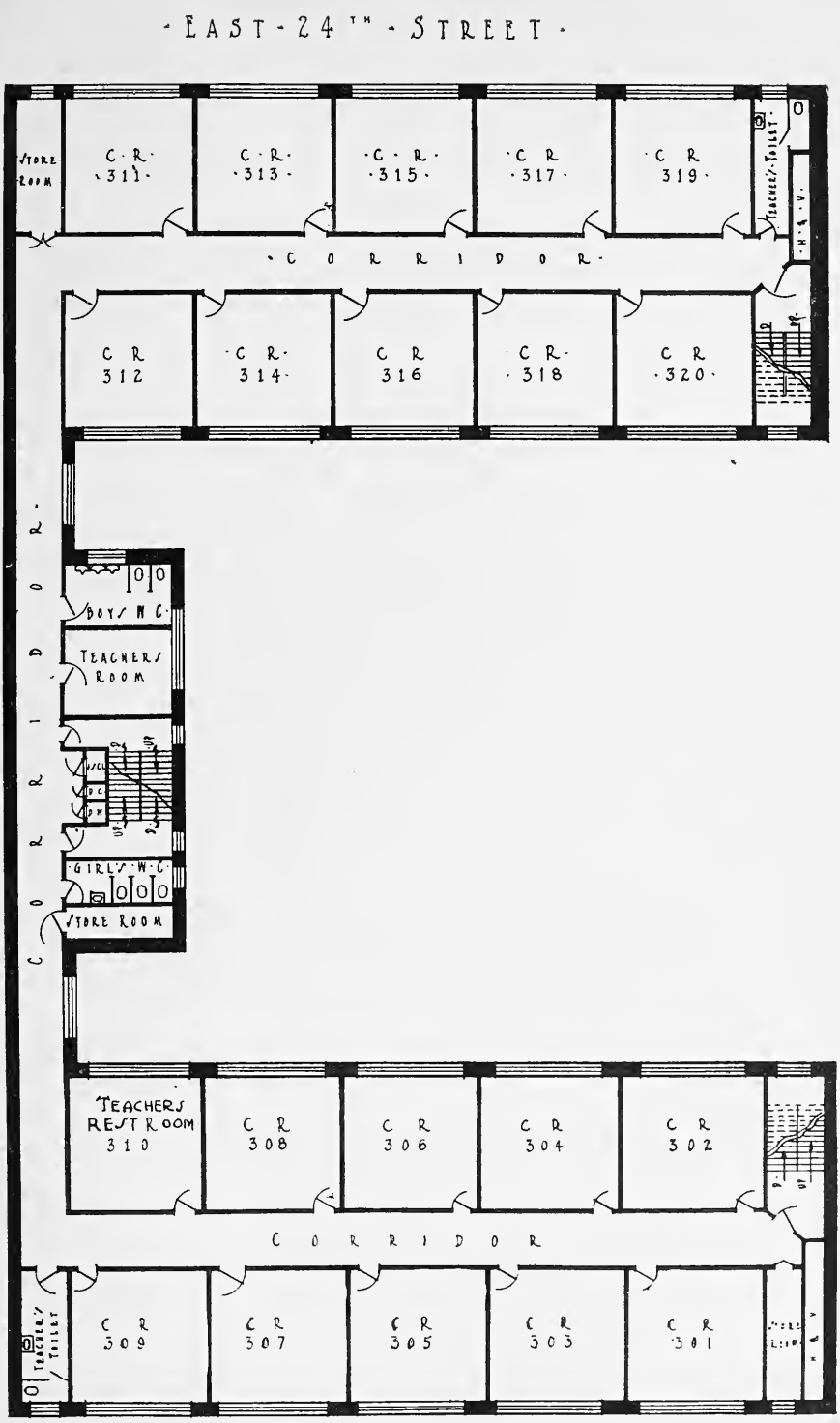


Fig. 15—TYPICAL FLOOR PLAN, SCHOOL FOR THE DEAF

The New York Training School for Teachers is another organization which has proven so successful that the Board of Education finds that it must be provided with new quarters without delay.

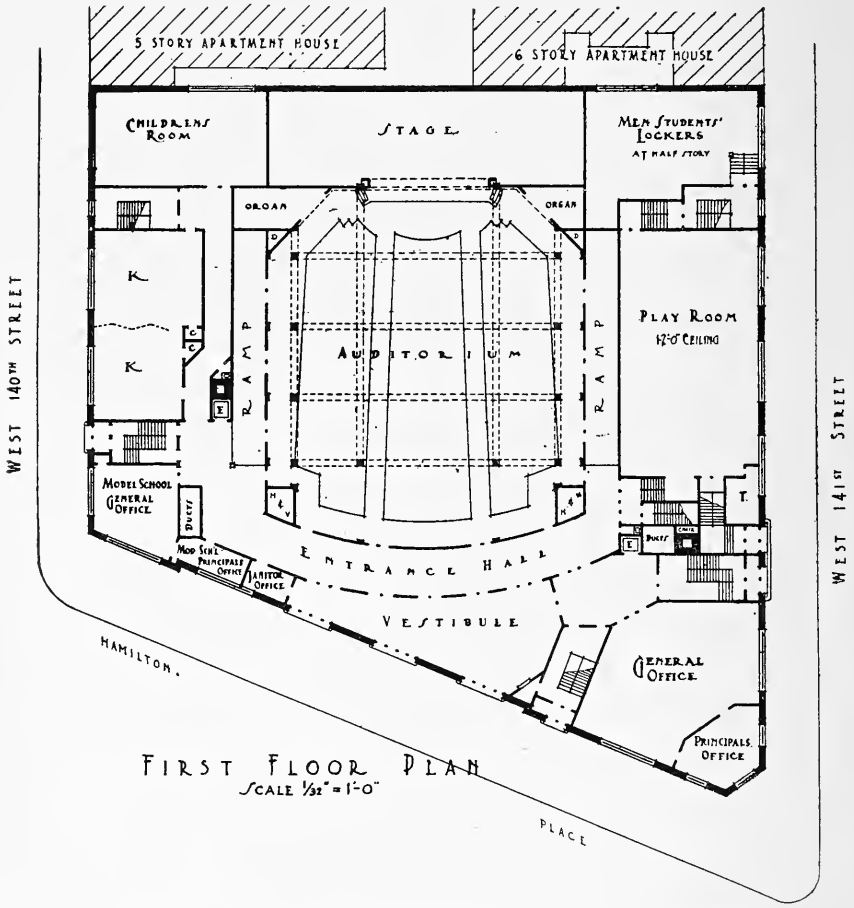


Fig. 16—NEW YORK TRAINING SCHOOL FOR TEACHERS

BOROUGH OF MANHATTAN

Plot is not only irregular in form, but the difference in grade as between the front and rear is about 15 feet.

The organization consists of a model school and a Department of Theory, which at present occupies a building designed and built wholly for elementary school purposes.

The neighboring schools need relief from overcrowding and the organization of a model school in the new location will serve this purpose.

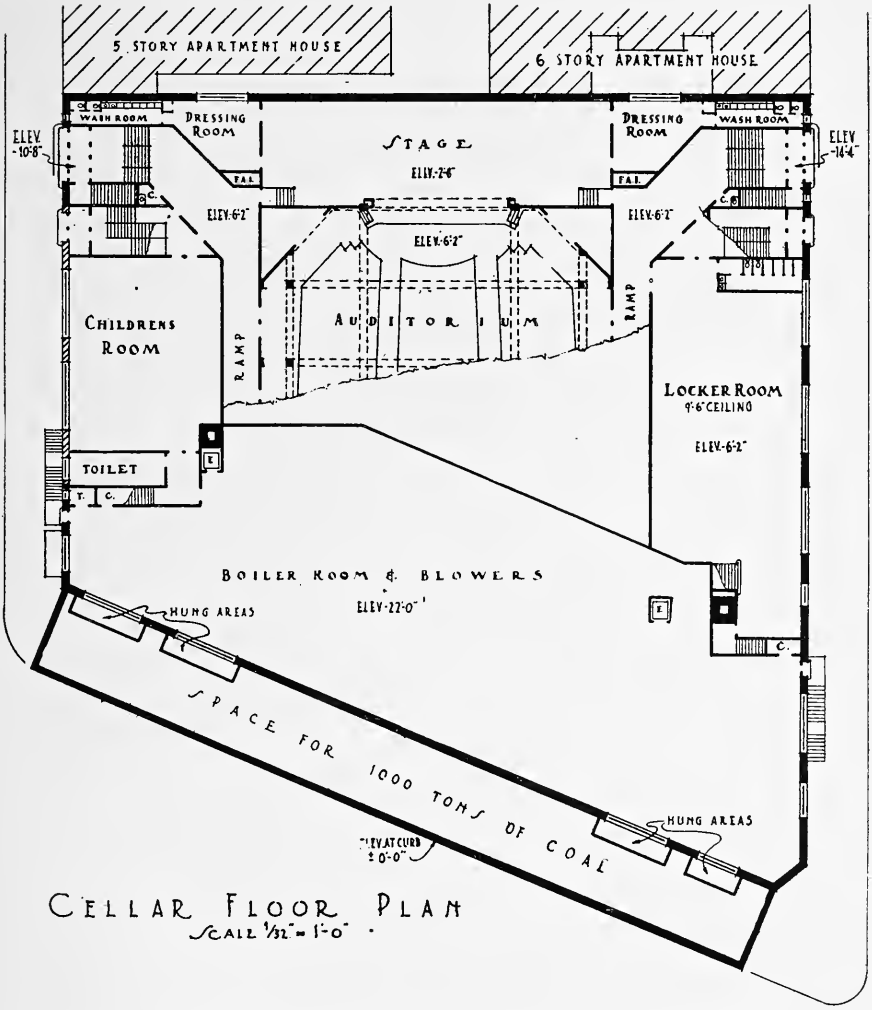


Fig. 17—NEW YORK TRAINING SCHOOL FOR TEACHERS

CELLAR OR LOWER FLOOR PLAN, SHOWING THAT THE EXITS FROM THE RAMPS AND CORRIDORS OPPOSITE THE AUDITORIUM FOLLOW THE NATURAL GRADING OF THE STREETS SO AS TO FORM EXITS AT THE LOWER LEVELS.

The school is distinctly of the Borough of Manhattan and it also must be so located as to be easy of access. It therefore follows that there is no unimproved land available, and the problem is therefore being met by the utilization of a vacant site which the Board of Education owns and which is located so as to serve every purpose. The site, however, is small, irregular in form and is on the side of a sharp declivity.

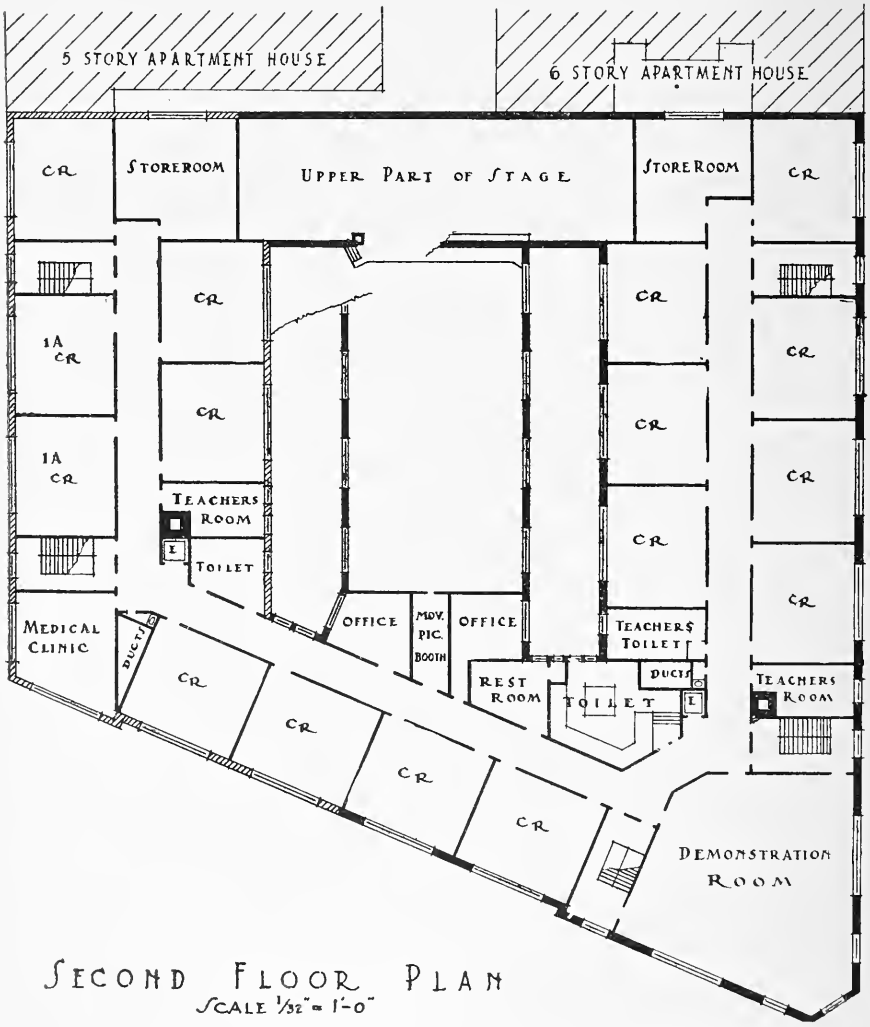


Fig. 18—NEW YORK TRAINING SCHOOL FOR TEACHERS

SECOND FLOOR PLAN. THAT PORTION WHICH IS HATCHED INDICATES THE MODEL SCHOOL; THE SOLID LINES THE DEPARTMENT'S THEORY.

Here again is an instance where the very difficulties which must be met and overcome in the planning of the building yield after all the utmost interest especially since the very objectionable features of sharp gradient and acute angles of the front are made to provide exceptional facilities for the good of the school.

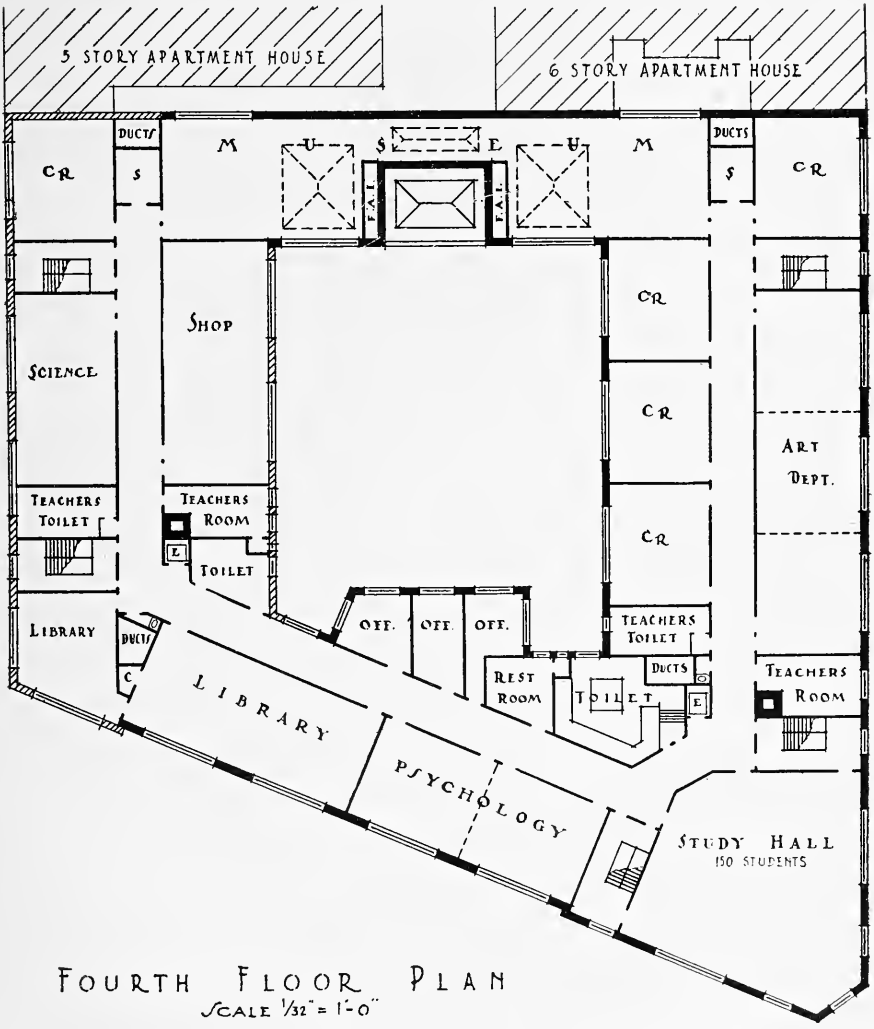


Fig. 19—NEW YORK TRAINING SCHOOL FOR TEACHERS
FOURTH FLOOR PLAN

All that will be lacking on the completion of the building will be a proper setting and an abundance of outdoor play space.

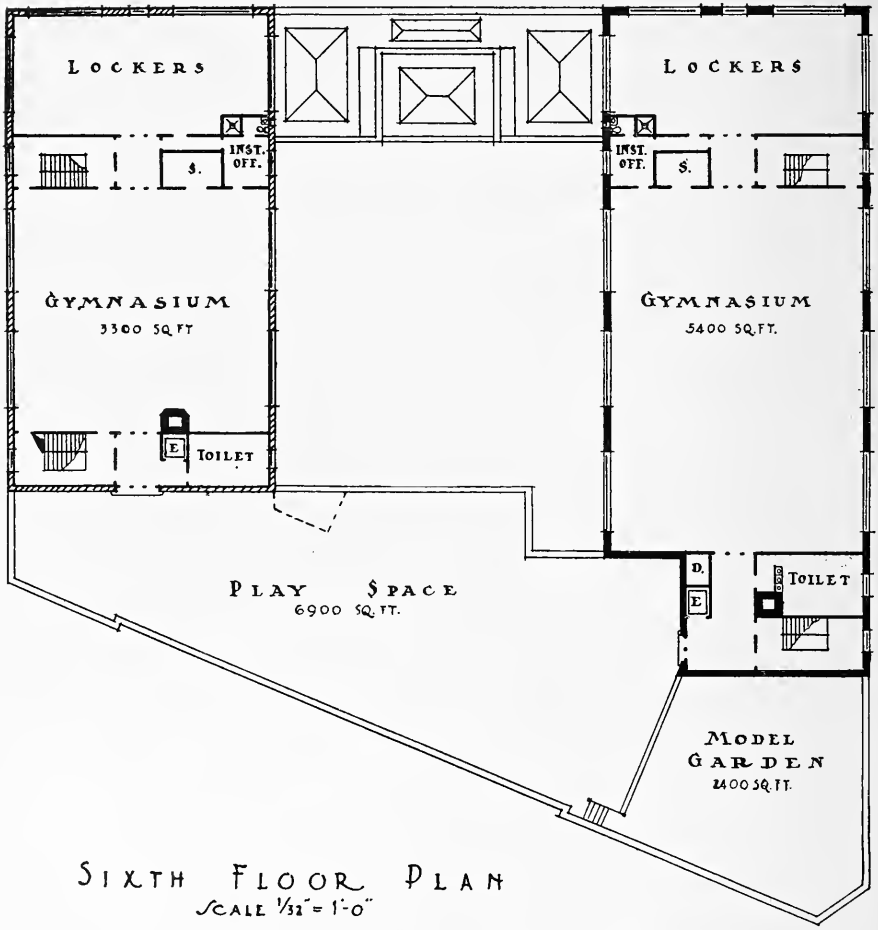


Fig. 20—NEW YORK TRAINING SCHOOL FOR TEACHERS
ROOF PLAN WITH TWO GYMNASIUMS

Again, these examples of special buildings are not given as what would be provided were there proper sites available or acquirable at a reasonable outlay of money, but rather, as the Superintendent of Schools views it, the providing of school facilities in the best manner possible in the most highly improved sections of the city where they have long been required, but have been set aside in years past, for less troublesome and less expensive projects.

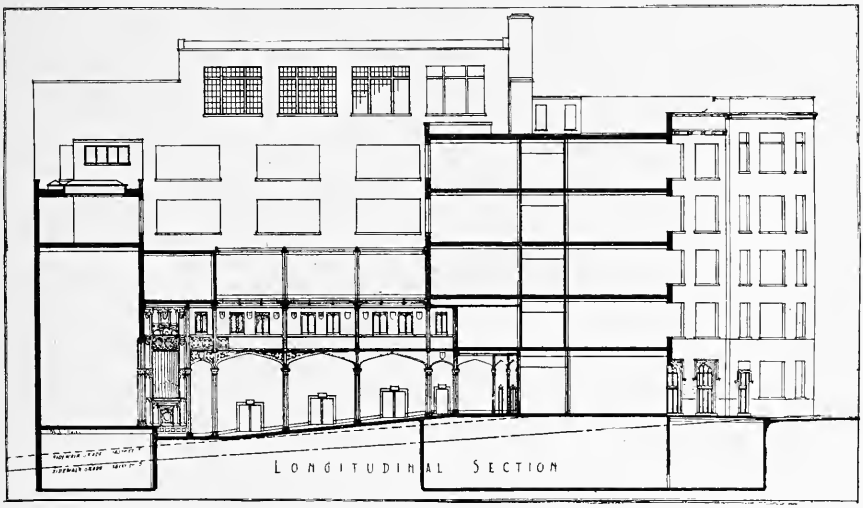


Fig. 21—NEW YORK TRAINING SCHOOL FOR TEACHERS
LONGITUDINAL SECTION

STANDARD TYPES OF PLANS

Many objections are usually raised whenever a standard plan is proposed, the principal one being that the adoption of such plan meant something fixed and unchangeable which would block all progress.

This basic objection can be shown to have no merit since the standard set up has been that of use by which all else might be measured, leaving the architect free to exercise his judgment as to the plan and design.

The Board of Superintendents reached the conclusion that a building would represent the maximum in size if it accommodated from 1,800 to 2,000 pupils, depending upon the kind of organization.

A plan was therefore developed, designated as Type A, on a maximum frontage of 193 feet. 6 inches, representing the minimum of the average frontage of a block, and as such would therefore be available for use wherever the type was required without the expenditure of the time needed for entirely new plans.

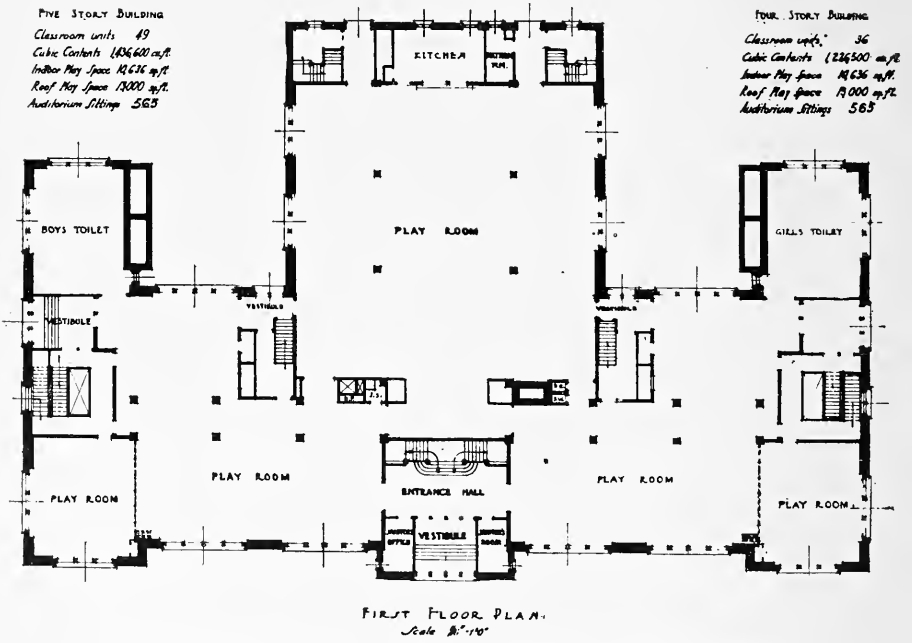
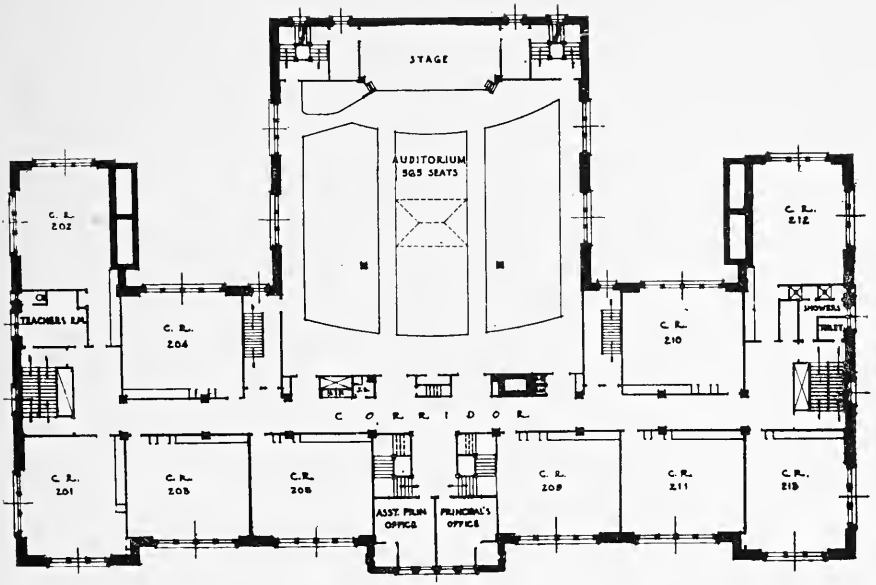


Fig. 22—STANDARD TYPE "A" ELEMENTARY SCHOOL

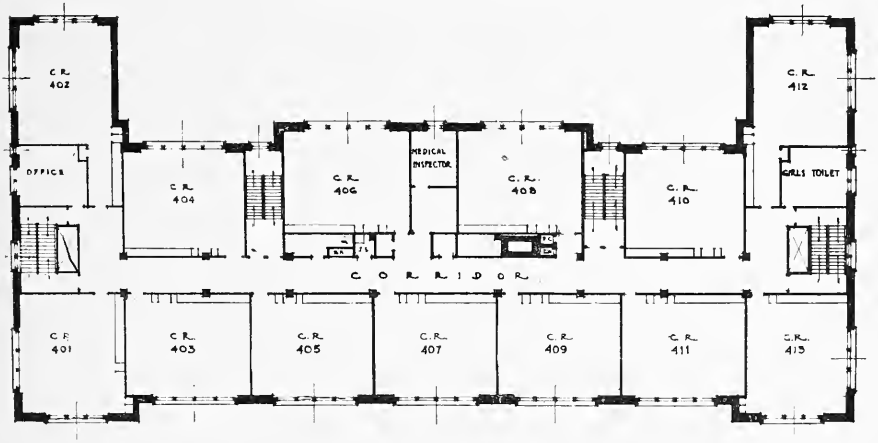
FIRST FLOOR PLAN

LARGE CENTRAL PLAYROOM BEING USED ALSO FOR GYMNASIUM PURPOSES



SECOND FLOOR PLAN
Scale 1/8"-1'-0"

Fig. 23—SECOND FLOOR PLAN
AUDITORIUM AND CLASSROOMS



FOURTH FLOOR PLAN
Scale 1/8"-1'-0"

Fig. 24—FOURTH FLOOR PLAN, which is typical

Note that there are no flues in the partitions between the various classrooms along the front, which gives opportunity for rearrangement as may best suit the various activities which require more than a classroom space.

The type plan has worked out exceedingly well in practice, fifteen such buildings having been either completed or are now under construction, with eleven others to follow within the next four weeks. However, the continued study of the problem of providing relief for the overcrowding, made under the direction of the Superintendent of Schools, has led to the adoption by the Board of Education of the recommendation of the Board of Superintendents that a 73-classroom unit and auditorium building be provided for two locations in the Bronx, instead of the Type A of 48-classroom units, as had been decided upon a year ago.

This problem has been met through the design of a building which provides for four separate and distinct gymnasiums of a size which makes possible the carrying out of a program enabling each pupil to have one period of physical training each day.

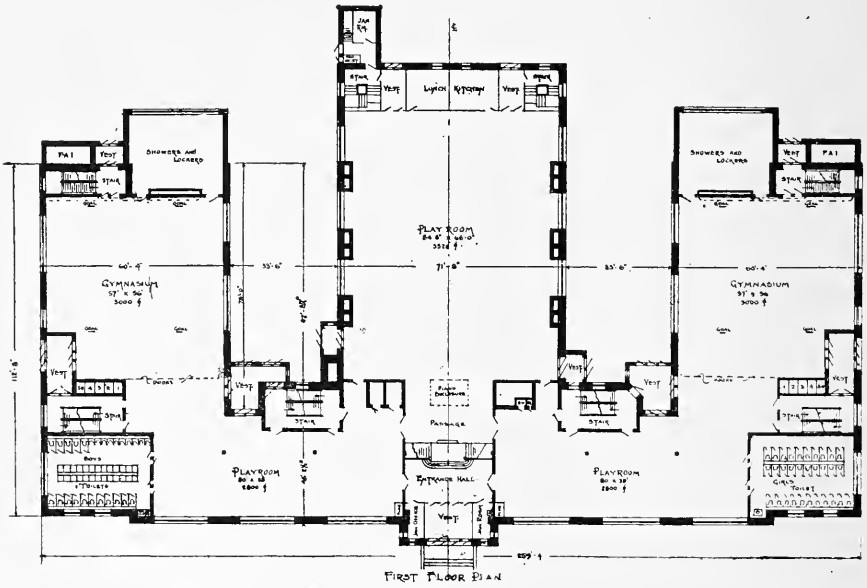


Fig. 25—FIRST FLOOR PLAN OF THE "A" 73 TYPE, PROVIDING FOR PLAYROOM AS WELL AS TWO GYMNASIUMS

This requires a frontage of at least 260 feet.

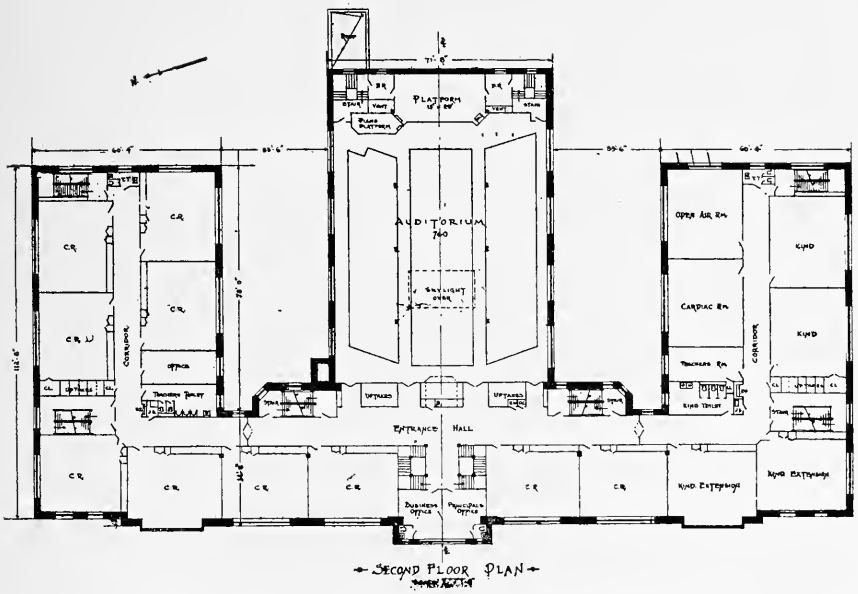


Fig. 26—SECOND FLOOR PLAN OF THE "A-73" TYPE

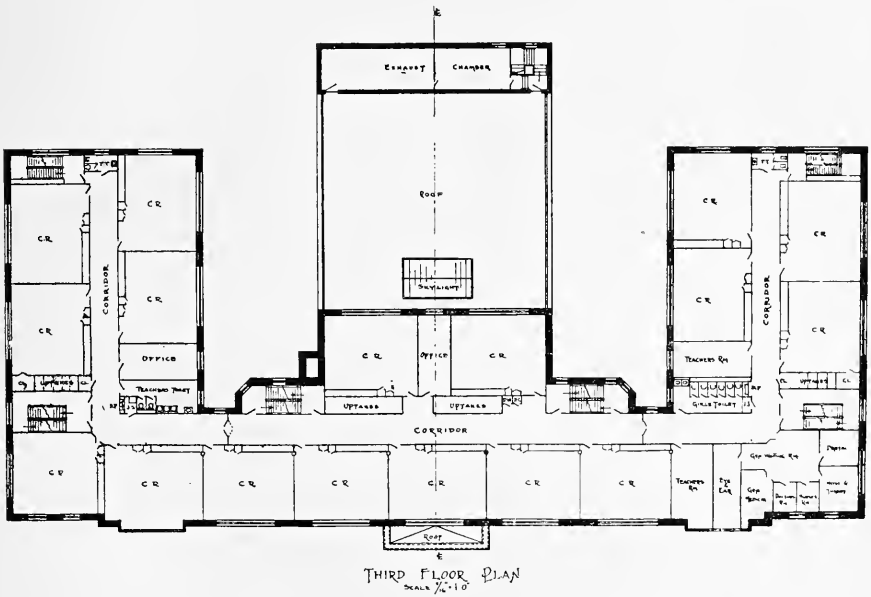


Fig. 27.

"A-73" TYPE, TYPICAL FLOOR PLAN. CLASSROOM UNITS TO BE REARRANGED TO SUIT VARIOUS ACTIVITIES

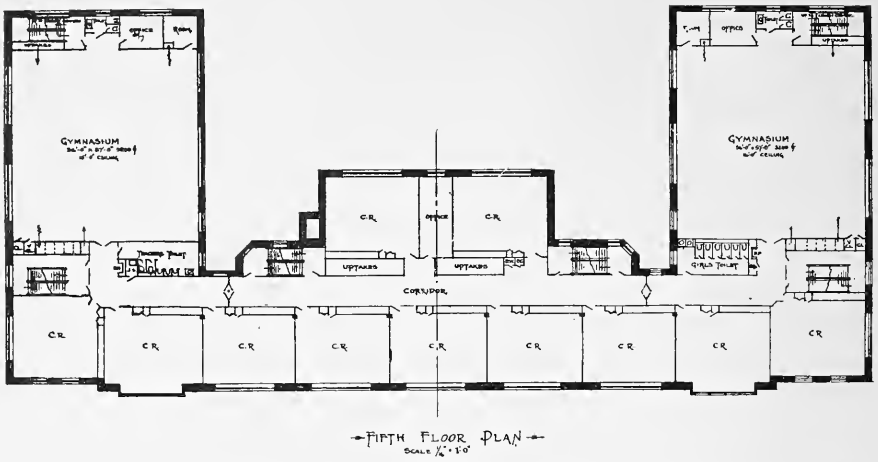


Fig. 28.

FIFTH FLOOR PLAN, SHOWING THE TWO GYMNASIUMS, EACH 3,200 SQ. FT. THESE, TOGETHER WITH THOSE ON THE FIRST FLOOR, MAKE IT POSSIBLE TO PROVIDE PHYSICAL TRAINING FOR ALL PUPILS OF THE SCHOOL EACH DAY.

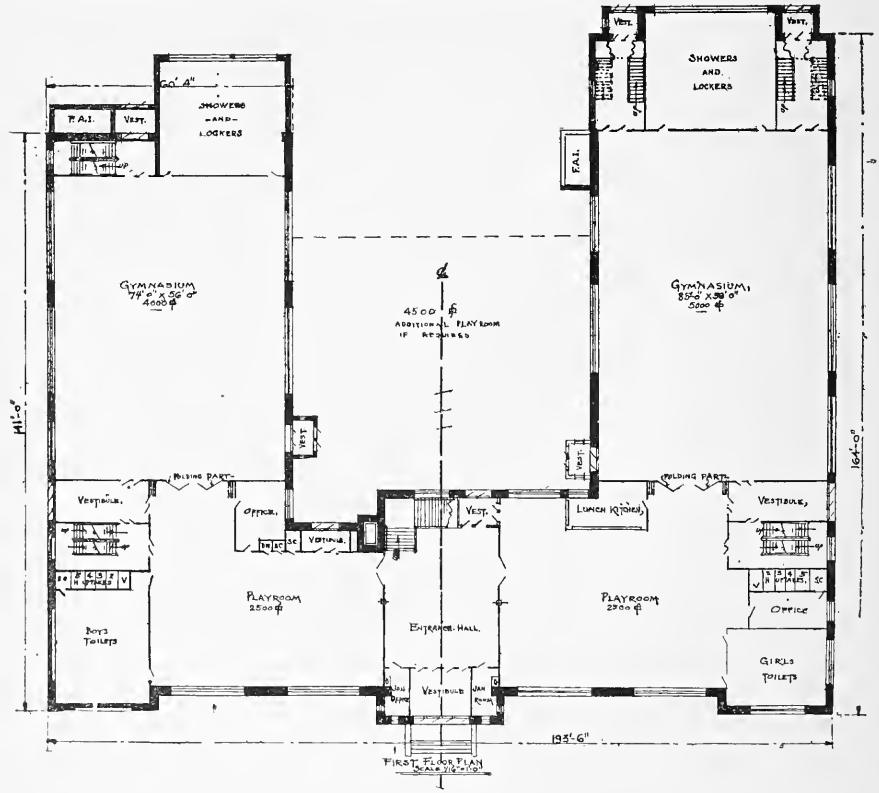


Fig. 29.

"ψ"-69 TYPE. FIRST FLOOR DESIGNED TO OVERCOME THE DIFFICULTY EXPERIENCED IN OBTAINING SITES FOR THE A-73 TYPE, WHILE PROVIDING FOR PRACTICALLY THE SAME ACCOMMODATIONS.

This new type is an enlargement of Type A and is traditional in that the auditorium is on the central axis of the building. The frontage required, however, is 260 feet, a plot which is not obtainable, except in outlying sections.

A recognition of this fact as well as that in all probability the Board of Superintendents would wish to plan school organizations ranging between the 48 and 73-classroom types, and at the same time retain the facilities for physical training which the larger one provides, led to a further study wherein the frontage of the building has been held to the 193 feet 6 inches as in the Type A which is essential if the buildings are to be placed in the older, or built up sections.

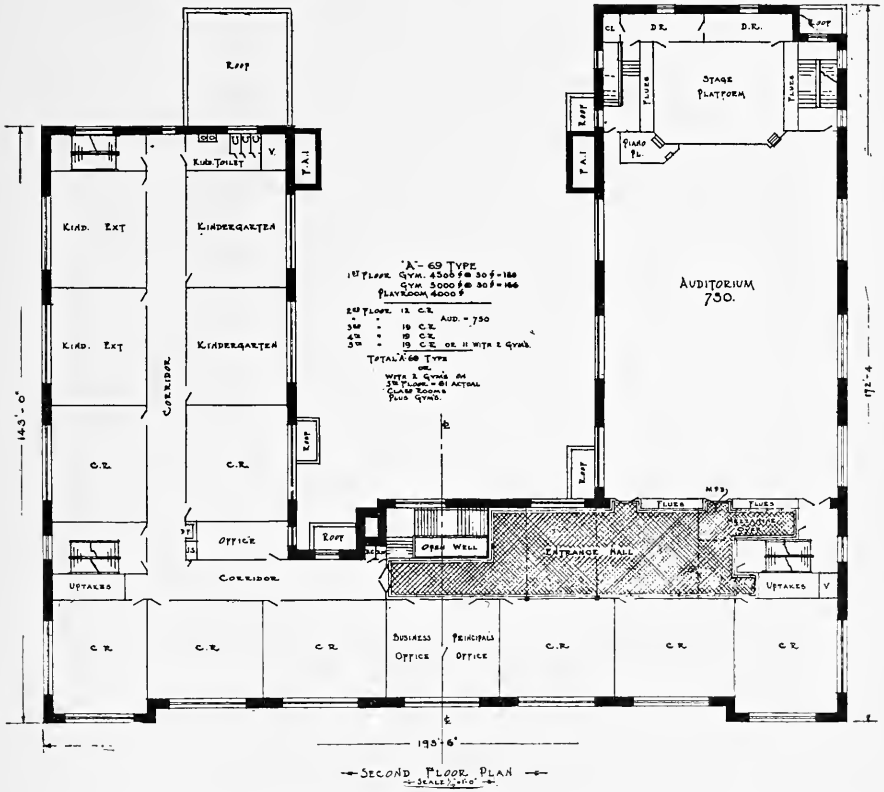


Fig. 30—69 TYPE. SECOND FLOOR PLAN.

Note: Auditorium as well as gymnasiums on the first floor will have light and air on both sides for the entire length. The large corridor space is to be used for exhibition purposes.

The result has been the presentation of plans for a 56-classroom unit and auditorium and a 69-classroom unit and auditorium, U Type, each so designed that they may be readily increased in size to any desired extent.

The much desired gymnasium accommodations have been provided in each case as well as an increase from 550 to 750 in the number of seats in the auditorium.

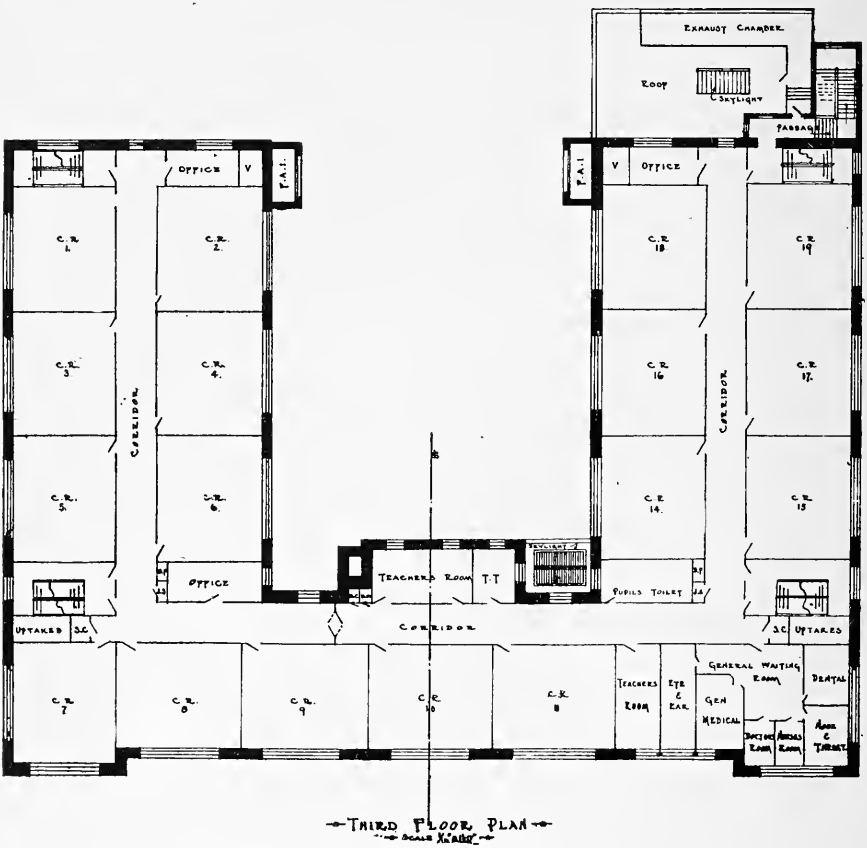
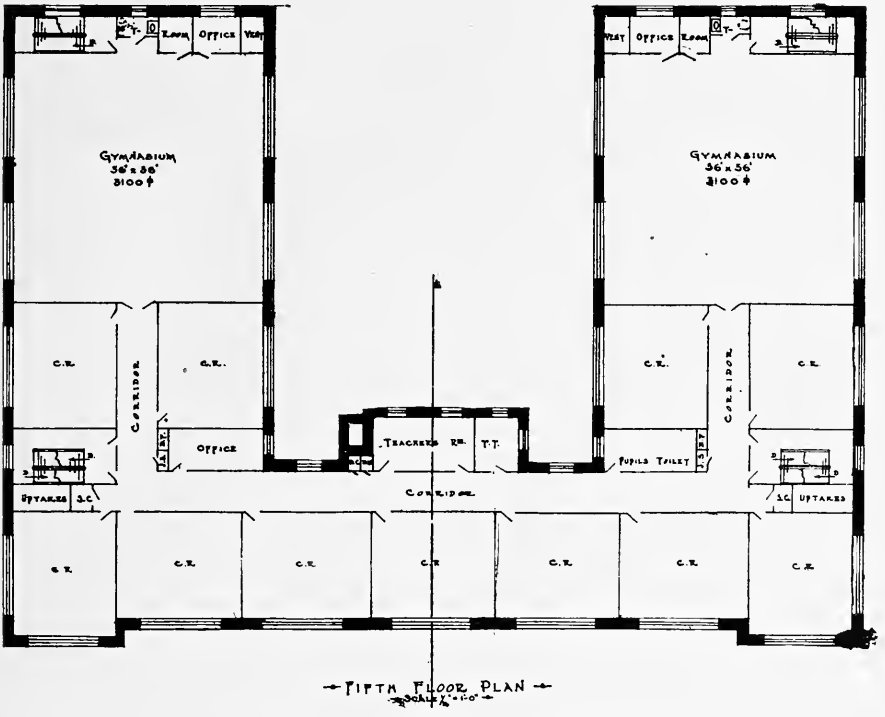


Fig. 31—69 TYPE. THIRD FLOOR PLAN.

These plans present a radical departure from the traditional type in that the auditorium is not on the central axis and one story and basement in height, but takes its place as the second floor of one of the wings which is 60 feet in width.

The approach will be by the main stair at the centre of the building leading to an entrance hall 22 feet by 80 feet, which will provide the proper and much needed space for school exhibits.



FIFTH FLOOR PLAN

Fig. 32—69 TYPE. FIFTH FLOOR PLAN.

The fact that the auditorium is not on the central axis is far more apparent on the plan than will be the case in actual construction. In this plan a great natural daylighting of the auditorium will be possible, since no part of it will extend back under the buildings, as now, necessitating the omission of about thirty per cent. of the windows which are required.

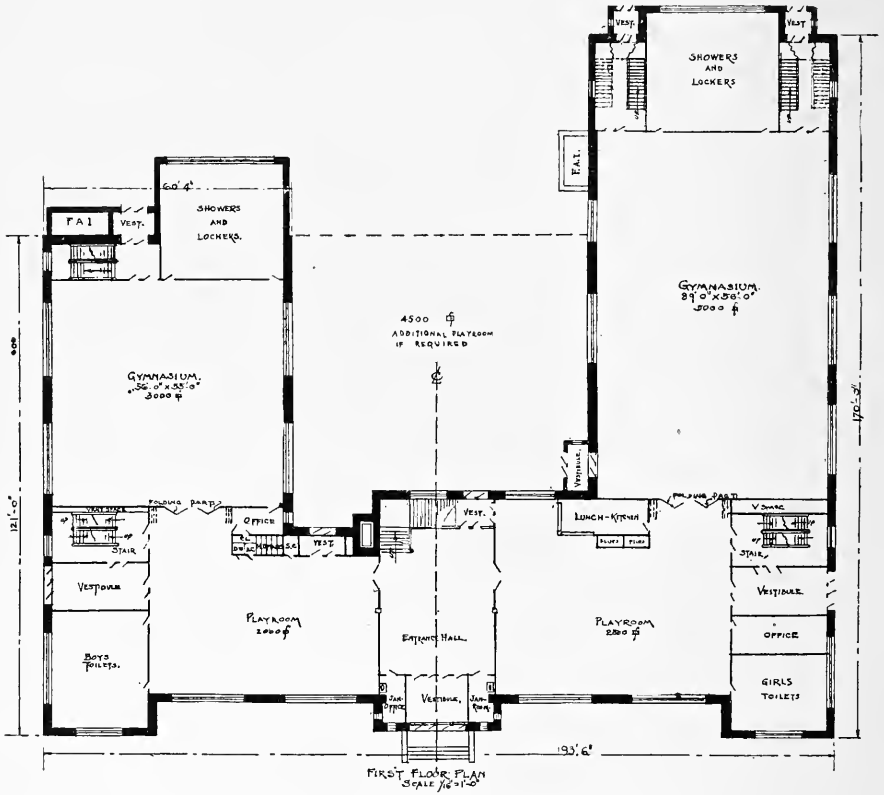


Fig. 33—"U-56" TYPE, MODIFICATION OF THE "U-69" TYPE.

This, together with the alterations of the first and second floors, represents the studies which we made in following out the same plan for the smaller building. Revised sketches are now under way which will more nearly correspond to the larger type, and yet provide only 53 classroom units.

The sketches indicate only about 5,000 square feet of indoor playroom space. This space may be increased to say 9,000 square feet by covering over a part of the central courtyard with a one-story building. This modification has not been shown as it is thought best to maintain the free light and ventilation for the gymnasiums now provided by the plan.

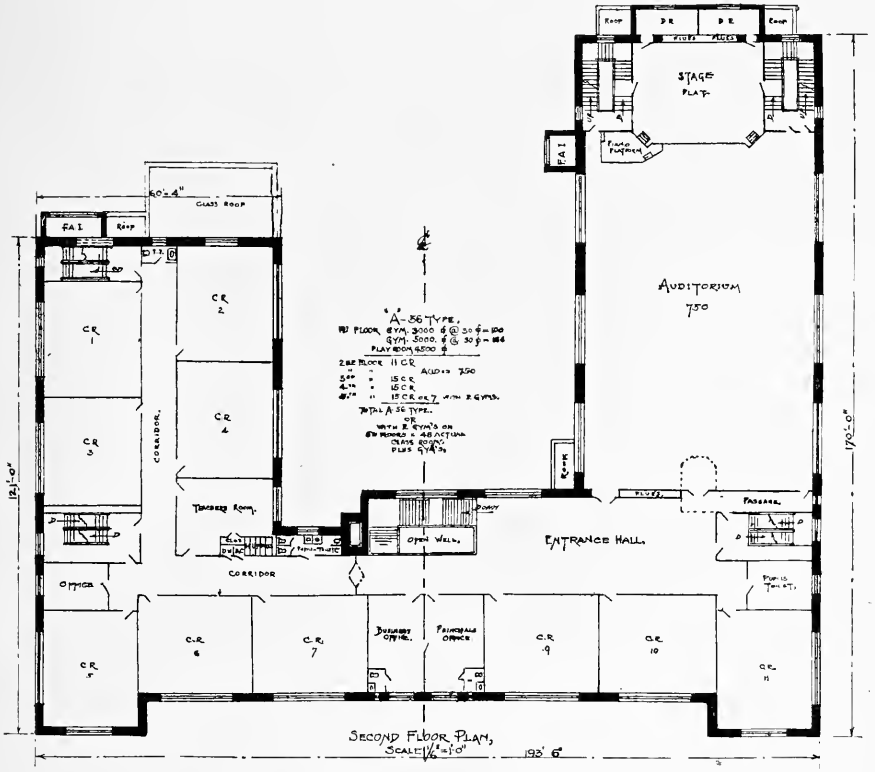


Fig. 34—"U-56" TYPE. SECOND FLOOR PLAN.

It would also seem fairly possible that these extra facilities might be obtained through the utilization of either one or both of the gymnasiums on the same floor level.

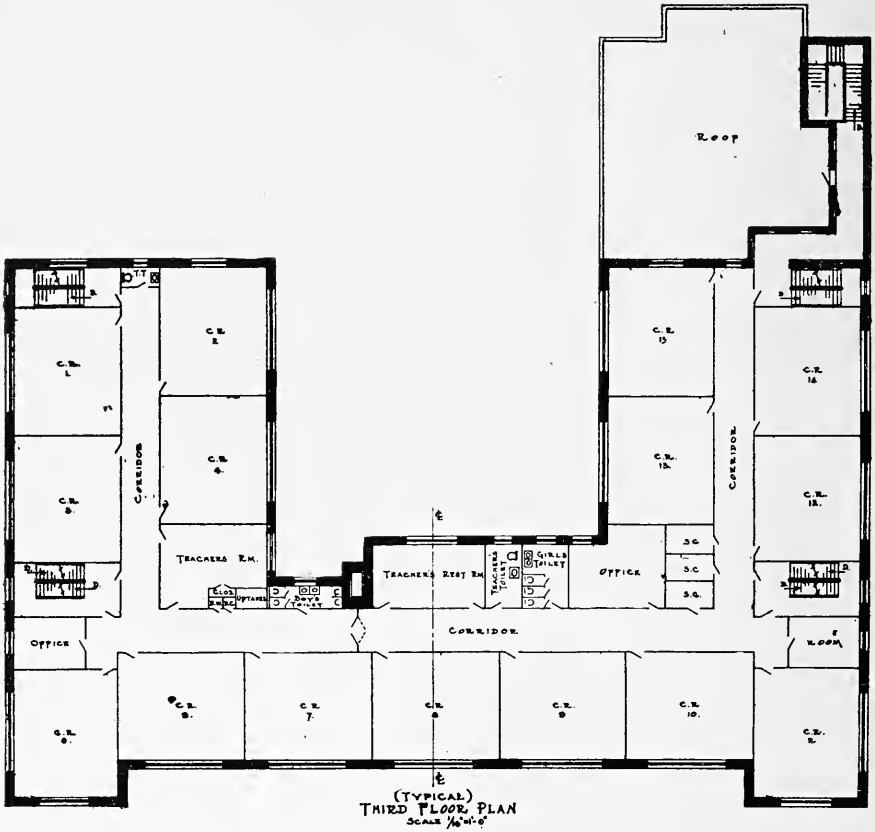


Fig. 35—"U-56" TYPE. TYPICAL FLOOR PLAN.

The following will indicate very clearly the accommodations provided by buildings of the 48, 56, 69 and 73-classroom unit types, it being understood that the classroom units will be utilized to provide for such activities requiring one and one-half or two classroom units as may be necessary for any particular plan of organization.

BUREAU OF CONSTRUCTION AND MAINTENANCE.

INDOOR PLAYROOM SPACE, AUDITORIUMS, GYMNASIUMS AND CLASSROOM UNITS PROVIDED BY VARIOUS TYPES OF BUILDINGS.

	48 CLASSROOM UNITS AND AUDITORIUM 193'6" front x 126' deep	56 CLASSROOM UNITS AND AUDITORIUM 193'6" front x 170' deep	69 CLASSROOM UNITS AND AUDITORIUM 193'6" front x 164' deep	73 CLASSROOM UNITS AND AUDITORIUM 260' front x 152' deep
FIRST FLOOR:				
Playroom area sq.ft.	10,500	4,500	5,000	9,500
Gymnasium,	———	3,000.	4,000	3,300
Gymnasium,	———	5,000	5,000	3,300
SECOND FLOOR:				
Auditorium seats,	550	750	750	700
Business offices,				
Classroom units,	10	11	12	16
THIRD FLOOR:				
Classroom units,	11	15	19	19
Gymnasium area, sq.ft.,	1,300			
FOURTH FLOOR:				
Classroom units,	13	15	19	19
FIFTH FLOOR:				
Classroom units,	13	7	9	11
Gymnasium,	———	3,000	3,000	3,100
Gymnasium,	———	3,000	3,000	3,200
Total playroom area,	10,500 sq.ft.	4,500 sq.ft. (May be 9,000 sq.ft. if required)	5,000 sq.ft. (May be 9,000 sq.ft. if required)	9,500 sq.ft.
Auditorium sittings,	550	750	750	700
Gymnasiums,	(1) 1,300	(1) 3,000 (1) 5,000 (1) 3,000 (1) 3,000	(1) 4,000 (1) 5,000 (1) 3,000 (1) 3,000	(1) 3,300 (1) 3,300 (1) 3,100 (1) 3,200
Classroom units otherwise available	47	48	59	65

Brooklyn, May 10, 1922.

Fig. 36.

It is believed that the 56 and 69-classroom unit types present many and distinct advantages over the A type.

For instance, there is the additional gymnasium facilities of proper form and location; the increased daylighting possible, and to mention only another, but one of prime importance, especially in this city, the fact that additions of any desired extent may be made with only a minimum of disturbance of the existing structure.

A further study of the plan will be made in order to adjust it to the 48-classroom unit organization and thus permit of its use instead of the present Type A, which can not be increased in size.

I consider this plan to be one of the most important which I have contributed in my service to the department, and feel safe in venturing the opinion that, because of adaptation without change in block front location, unrestricted natural light and air to every room used either for instruction or administration, enlargement to any extent desired without expense for changes and alterations to the then existing building, ease of administration, as well as economy in plan and in cost of construction, it will quickly take its place as the standard type for New York City schools.

HIGH SCHOOLS

The advantage to be derived from standardization has been quite apparent in the preparation of plans for the new High Schools, for while each of the four new ones are planned for 3,500 students, yet there exists a reasonable need for one of about one-half this capacity.

We believe this need may be met through the development of the 73 or 69-classroom unit and auditorium type of building for high school use, utilizing such classroom units as may be necessary for various activities.

This possibility was suggested in response to a request for something to meet the needs of a community which was very much divided in sentiment as to the location of a proposed large high school building, it being thought that two smaller ones at

some distance apart might best solve the problem. One of the advantages will arise from the fact that a very large saving in time would result in the preparation of the plans through the use of the standard, for which the drawings of walls, columns, girders and floor systems, heating and ventilating, and much other work would be readily available.

Further, such a building could be readily and inexpensively converted from an elementary to a junior high, or in any other combination, since the same standard of layout and construction would be followed.

It was thought that the limit in size, at least of High Schools, had been reached when the last one designed, some years ago provided for 2,500 students.

The pressure for secondary education, however, is so great, with the resultant overcrowding of all existing facilities, that the Board decided that the four High Schools now to be erected should provide for approximately 3,500 students each.

The first of these for which contract has been let is the Thomas Jefferson located in the southwesterly part of Brownsville section of Brooklyn.

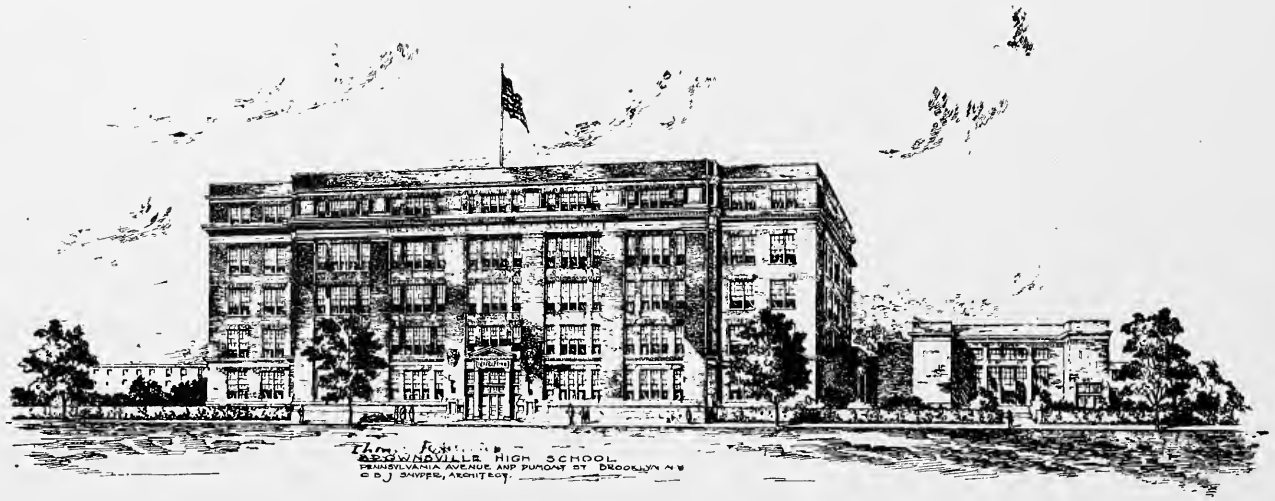


Fig. 37—THOMAS JEFFERSON HIGH SCHOOL

BOROUGH OF BROOKLYN.

This building was first named the Brownsville High School, under which title the drawings were prepared. It is the first of the large high schools, for the construction of which provision has been made.

The site for this building was acquired April 2, 1915, the declared intention at that time being to construct a high school at once.

The plot has a frontage of 195 feet on Dumont Avenue and extends back for 420 feet on Pennsylvania and Sheffield avenues.

A new building for this site was included in the 1921 building program by the present Board of Education and an allotment made therefor out of the first installment of monies granted by the Board of Estimate and Apportionment May 13th, 1921.

Plans were started at once.

The building will make provision for the instruction of both boys and girls, with total normal accommodations for 3,500 students.

The building has been designed so as to provide the best of facilities for school administration and instruction, and at the same time prove economical as to construction and maintenance. Further, that to the fullest extent it shall meet the requirements for social and community activities without in any way lessening its value for school purposes.

In fact, the two have been combined to even a greater extent than was the case in the Washington Irving High School at 16th street and Irving place, Borough of Manhattan, which probably stands at the head of the list of public school buildings in this country in the matter of intensive use, not only for school but for community service.

Effort has therefore been made to retain and develop such features as especially appeal to the school or the community and to suggest such others as were thought to be desirable.

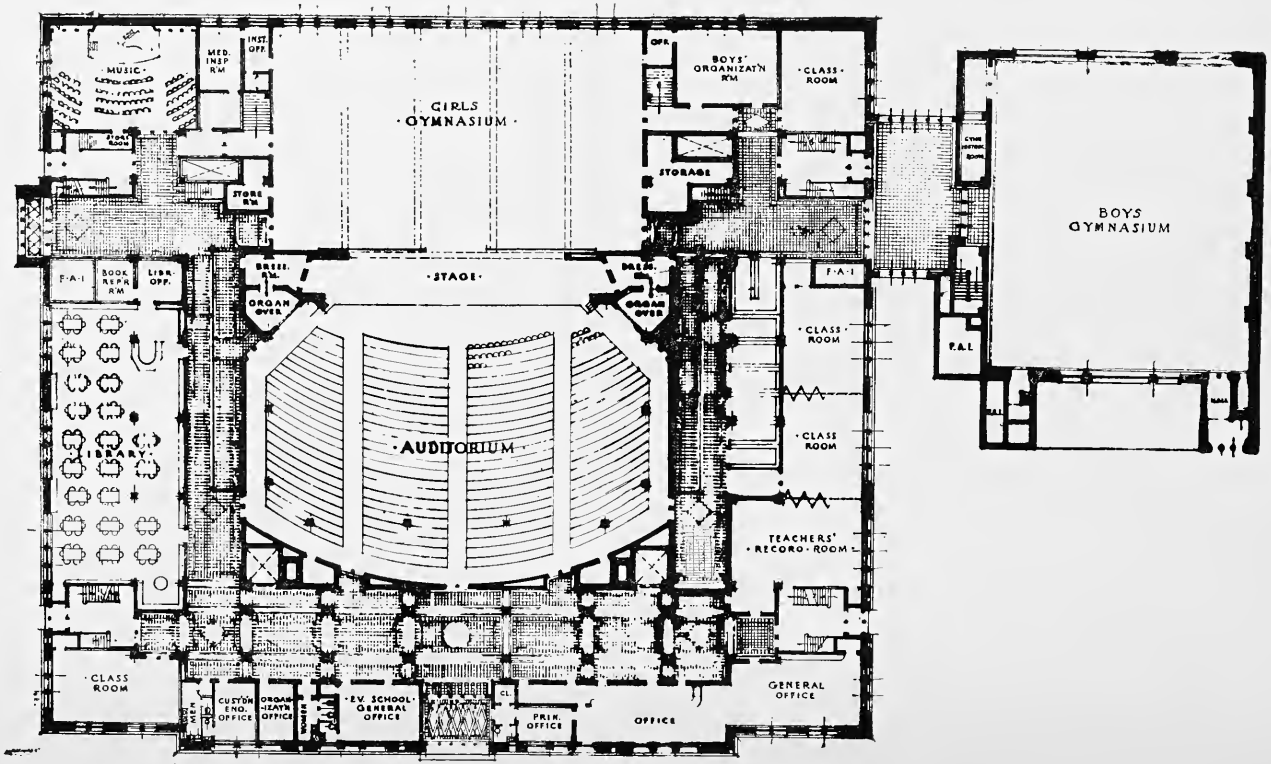


Fig. 38—THOMAS JEFFERSON HIGH SCHOOL, BROOKLYN.
One of the earlier sketches indicating the proposed apportionment of space.

The main or central entrance leads directly to a large hall on which, at the right, are the office for the principal and the general or executive offices for the school.

A very careful study of the business involved in the immediate administration of our larger high schools leads to the conclusion that both its importance and volume has been underestimated.

Not only, therefore, have office arrangements and conveniences familiar to the business world been provided, but also, adjacent thereto a teachers' record and program room. Directly beneath this and accessible by a stairway is to be a large general book and supply room, from which distribution may be made to the various floors by means of one of the elevators.

To the left of the entrance are the offices for the Principal of the Evening School, the general organization or other activities, as well as one for the custodian.

A large entrance hall leads directly into the auditorium, which occupies a central position, with wide corridors on each side.

The opening in the proscenium wall is about 72 feet wide. This fixes the length of the platform, which, however, is indicated as of a normal depth, sufficient only for ordinary use, but not at all adequate for graduation exercises, plays, pageants and many other uses which now seem essential for the school and for the community.

In order to meet these demands without devoting a thousand or more square feet of floor space to only occasional use, the girls' gymnasium, which is planned to be sixty feet in depth by one hundred feet in length, is placed directly behind and on the same level with the auditorium platform.

Instead of a permanent partition provision is made for a movable partition operated by electric power, which will give opportunity for a clear, unobstructed opening of about sixty feet in width.

This will afford unlimited space for the production of pageants or plays, or for exhibitions, games, athletics or any other features of interest.

In case of need the combined auditorium and gymnasium will afford accommodations for a mass meeting or other gatherings of about two thousand, five hundred people.

In anticipation of this large use, ample exits have been provided on either end of the gymnasium leading straight through to the streets or open yards.

At the left of the auditorium is the library, accommodating about 125 students when seated six at a table, space being provided for the usual library equipment, book stacks, etc., as well as a reading alcove and an office and a librarian's room for the repair of books.

The corridor partition above the book stacks, which should be only 4 feet six inches high, will be made of plate glass, thus affording, from the corridor, an uninterrupted view of the interior of the library, which will be made most attractive.

The music room, seating about one hundred persons, is placed at the rear. A platform for a piano, as well as a room for the storage of musical instruments are included in the plan.

Usually the music room and the library are located above the first floor, but having in mind the vast opportunities which they present for community use, they have been placed on the first floor, as it is now understood that this will not seriously interfere with their use for school purposes.

Adjacent to the gymnasium are rooms to be used for purposes of instruction in hygiene. Another one is primarily for assignment for a meeting place for boys' neighborhood clubs or other organizations, and can be fitted up so as to more readily withstand the wear and tear to which it would be subjected.

The gymnasium lockers have been placed in rooms beneath the gymnasiums rather than crowd them into the first and mezzanine floors, the latter of which provides small visitors' galleries at either end of the gymnasiums.

The girls' gymnasium has been placed directly back of the platform, while the boys' gymnasium is in a separate building to the right of the main building and connected therewith by a wide entrance hall.

Beneath the boys' gymnasium and lighted by skylights is the swimming pool of standard size 21 by 60 feet.

In addition to this are shower baths, toilets, locker rooms and all other facilities.

The arrangement is such that the swimming pool may be shut off so as to be used either by boys or by girls, as need may arise.

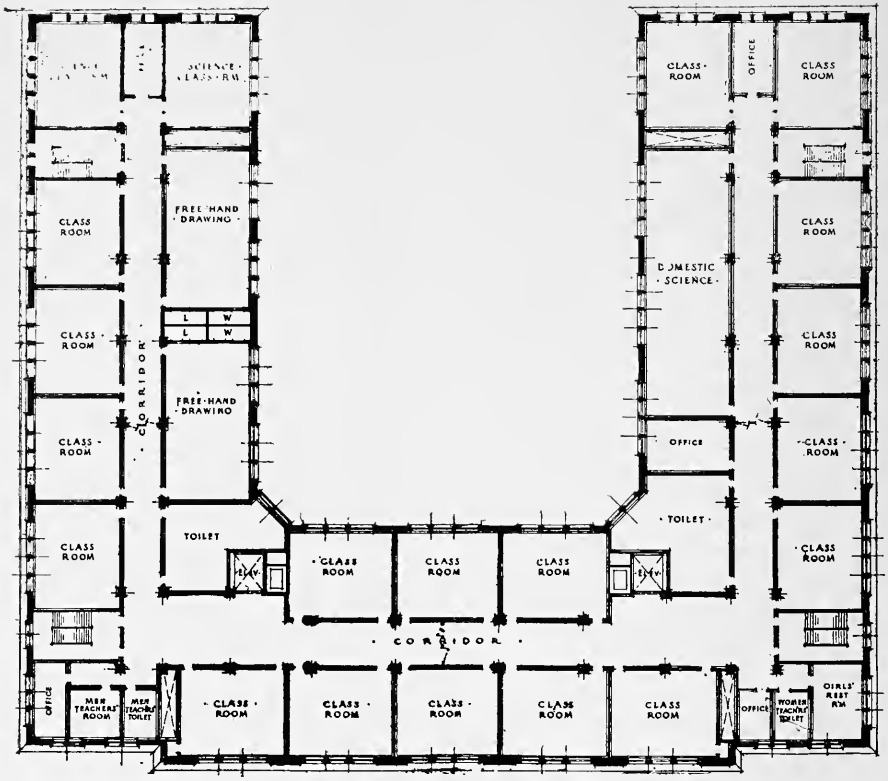
The separation of the boys' gymnasium from the main building makes it possible for this to be used for entertainments, dancing, athletics and numerous other purposes without in any way interfering with the main building or even requiring that it be opened for entrance purposes.

Further opportunity for community use has been afforded by the use of folding partitions between the teachers' record room and the two classrooms adjacent, so that if all these rooms were equipped with tables and chairs they would be readily available for use.

The almost universal need of putting into effect double session programs in high schools has created an insistent demand for an increased number of pupils' lockers over and above those placed in the official classrooms.

To meet this demand space has been provided on the first floor for about 250 clothing lockers, and on the second or gallery floor for about 500 others.

The floor of the auditorium is planned with the maximum slope allowed by the Building Code. In order to take up this difference in level which would be greatest at the exits next the platform, the level of the corridor floors has been adjusted to meet this by gradient rather than through the use of steps.


CLASS ROOM
FREE HAND DRAWING
CORRIDOR
TOILET
CLASS ROOM
CLASS ROOM
CLASS ROOM

Splendid facilities for instruction have been provided the following being the assignment of space:

71	Classrooms @ 35 each	2,485
2	Science rooms @ 35	70
1	Music room	98
2	Typewriting rooms, 1 @ 40 and 1 @ 60	100
4	Drawing rooms @ 35	140
1	Domestic science room	35
1	Lecture room (seats 70)	35
1	Physics laboratory	35
1	Chemical laboratory	35
1	Botany laboratory	35
1	Zoology laboratory	35
1	Sewing room	35
1	Library	125
1	Printing room, ½ unit	
1	Bank and store, ½ unit	
	Total	3,263
	In addition, there are two gymnasiums with a capacity of 200 each, a total of	400
	Grand total	3,663

The library, which seats from 100 to 125, and the cafeterias seated with tables and chairs, will, on the bases of 20 square feet per pupil, accommodate 250 each, or a total of 500 pupils.

The cafeteria, which in a building of this size, requires a large amount of space, has been placed on the top floor and extends across the entire front of the building, accommodations for boys being placed on the one side and for girls on the other.

The kitchen occupies a central location and serves not only the two lunchrooms for the students, but also the teachers' lunchroom, which is placed on the mezzanine floor.

Service is provided by means of elevators running through to the basement, one of them to handle all supplies, thus avoiding all contact with those portions of the building which are occupied by the students.

The tables and chairs for the equipment of the cafeterias will be of a type similar to those in use both in classrooms and lunchrooms of the Washington Irving High School. When not in use, the cafeteria provides a large, light, airy space which can be utilized for study purposes.

To insure against disturbance by the lunch service provision has been made, by means of folding doors, to shut off an area of about five thousand square feet for each of the cafeterias, so that neither noise, odors nor other disturbing features of the lunch service will be present.

These doors enclose the space in which is placed the kitchen, the lunch counters and other equipment, so that when thrown back at the time when service is actually required, it opens up directly into a large lunch room.

This disposition of the space will very largely increase the number which the building may be called upon to accommodate.

The administrative requirements for the new building particularly demand that provision be made outside the rooms for instruction.

Offices for heads of department for the transaction of business are required at various points.

Rest rooms for teachers and sick rooms for girls students are provided.

Toilet facilities of the very latest type have been placed at the most convenient locations.

Full electric light provision will be made, so that the building may be used in whole or in part for evening instruction or community use.

Particular attention will be paid in the designing of the heating and ventilating plant so as to further this most desirable end.

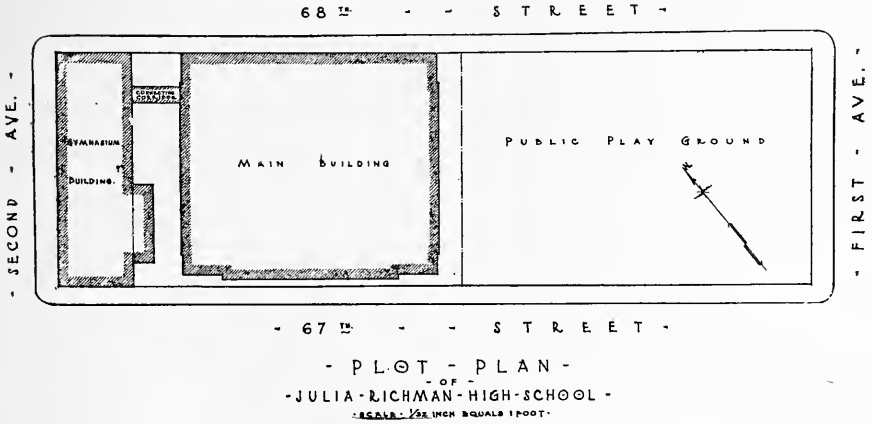
Bids for the general construction were opened on April 18th, award being made to the lowest bidder—$1,266,621.00.

The contracts for Sanitary, Electric, Heating and Ventilation, Furniture and Gymnasium equipment, will probably total about $600,000, so that the total cost, ready for occupation, will be somewhat less than two million dollars.

THE JULIA RICHMAN HIGH SCHOOL

The second of these large high schools to be put under contract will be that for the Julia Richman, on 67th to 68th streets, east of Second avenue, in the Borough of Manhattan.

The site is practically vacant and as such was the only one available.



PLOT PLAN
OF
JULIA RICHMAN HIGH SCHOOL
SCALE 1/32 INCH EQUALS 1 FOOT

Fig. 40—PLOT PLAN, JULIA RICHMAN HIGH SCHOOL, 67TH STREET AND 2ND AVENUE, MANHATTAN.

A public playground occupies the easterly end of the block.

The site was at first considered as wholly unsuitable because of the noise caused not only by the street traffic but by the elevated and surface cars as well.

The problem was solved, however, by planning for a separate building along the entire Second avenue frontage of some six stories in height, the 1st floor being devoted to a swimming pool, dressing rooms, showers, medical examiner, corrective training, offices and laundry.

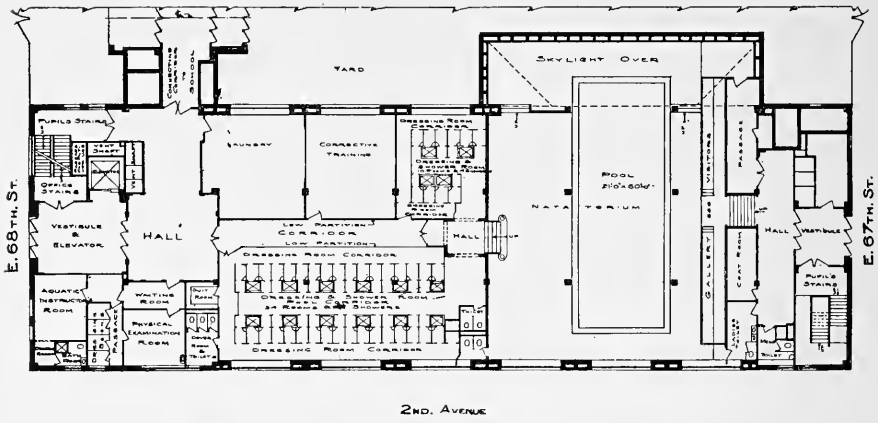


Fig. 41—JULIA RICHMAN HIGH SCHOOL.

GYMNASIUM BUILDING, FIRST FLOOR PLAN, WITH SWIMMING POOL, LOCKER ROOMS, LAUNDRY ROOM, CORRECTIVE TRAINING AND OTHER FEATURES.

The large gymnasium is placed on the second floor, two gymnasiums on the third floor, while the upper floors will be used for those school activities, such as typewriting, which will not suffer from the noise incident to the operation of the "L" roads.

The second and third floors are planned for gymnasium use, while the floors above are assigned to school use as may be required.

This gymnasium is separated from the main structure by a court 45 feet wide, closed on the north end by connecting passageways from the several floors, but upon the south side open to the street.

It is believed that this arrangement will eliminate the noise of traffic as nearly as is possible in such closely built up sections of the city.

The building otherwise is very much like the Thomas Jefferson, as is also the New Utrecht High School, to be erected in the southwesterly or Bath Beach section of Brooklyn.

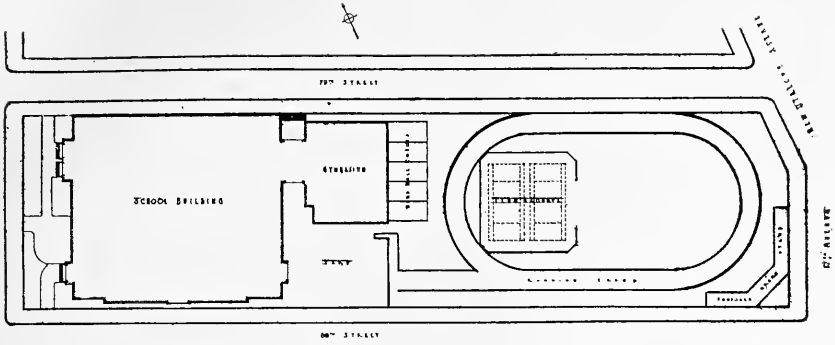


Fig. 42—NEW UTRECHT HIGH SCHOOL,

79TH-80TH STREETS AND 16TH AVENUE, BOROUGH OF BROOKLYN

The building has been placed at the 16th Avenue end of the block in order to avoid the noise due to the operation of the "L" road on New Utrecht Avenue.

The Board was exceedingly fortunate in selecting a site for this last named school, since it was enabled to obtain an entire block, thus providing for an athletic field immediately adjacent to the building.

THE GEORGE WASHINGTON HIGH SCHOOL.

The fourth of these very large secondary schools, the George Washington High School, is to be erected on Audubon avenue opposite 193rd Street, Borough of Manhattan.

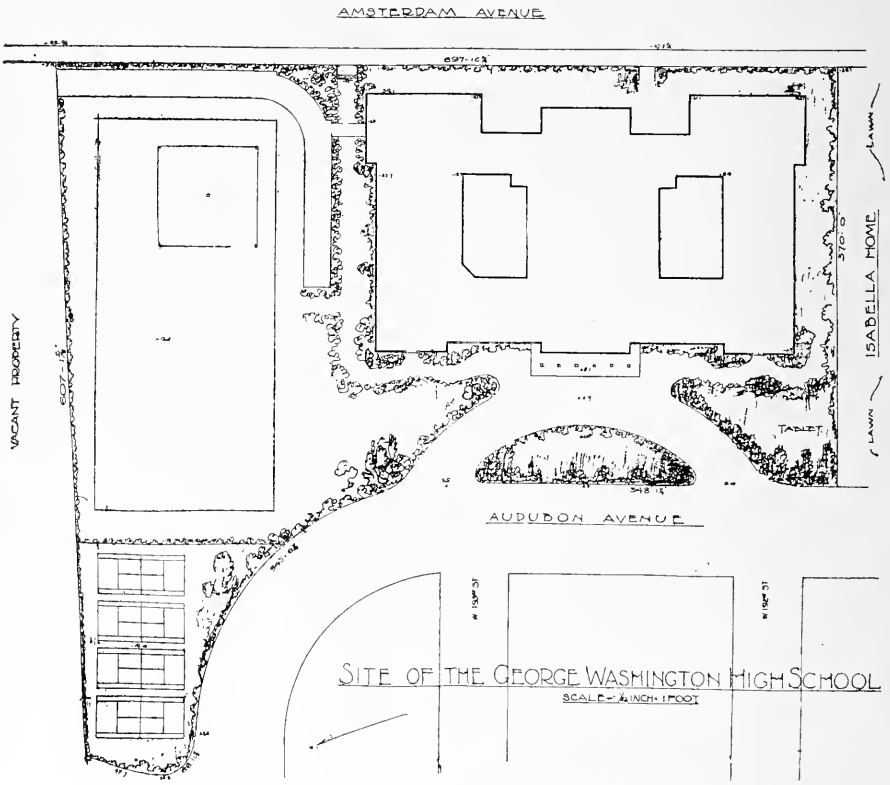


Fig. 43—SITE OF GEORGE WASHINGTON HIGH SCHOOL.
Old Fort George of Revolutionary fame occupied that portion of the plot upon which the yard tablet has been marked.

It includes a part of the site occupied by Fort George of Revolutionary fame, and because of the insistence of Superintendent of Schools Ettinger that the sites acquired be just as large as could be possibly obtained, it was made to include a plot of about 750 feet in length, which is to be subsequently enlarged.

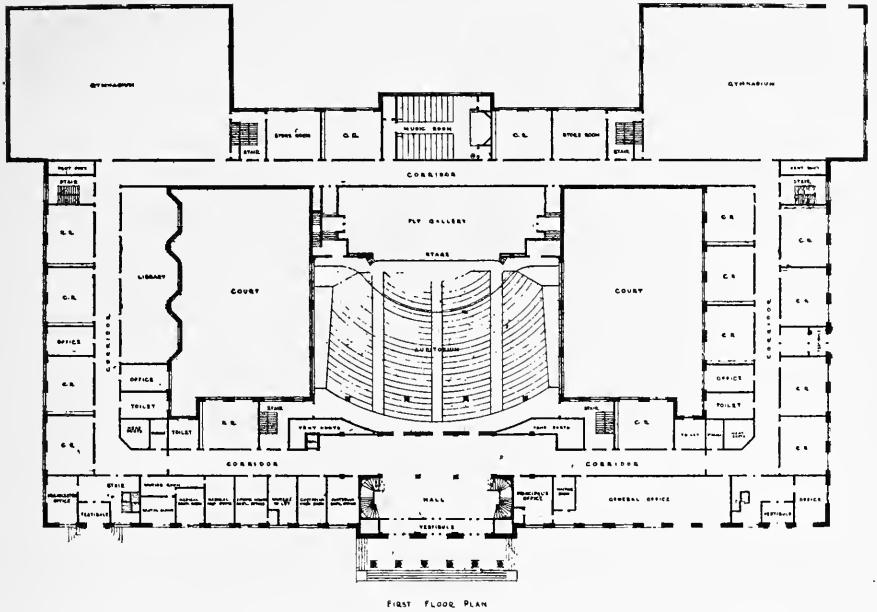
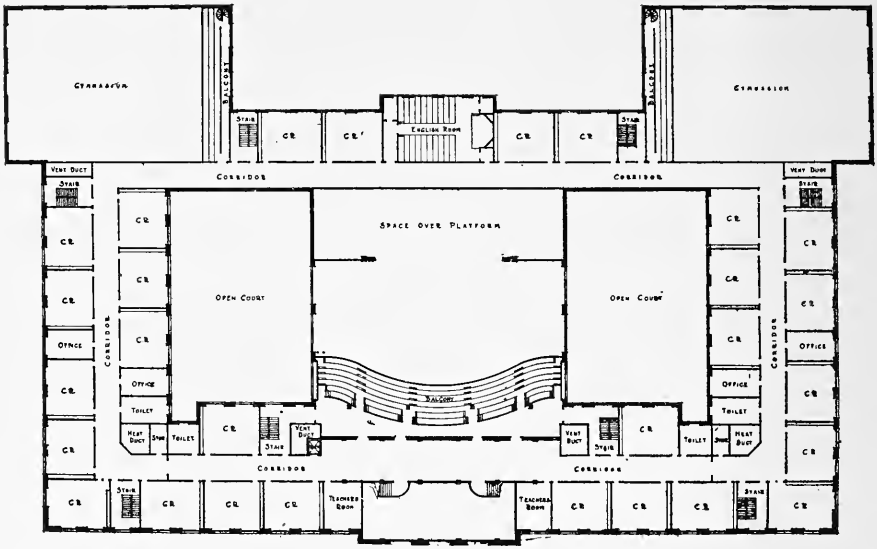


Fig. 44—FIRST FLOOR PLAN.

The space in the floor below at the rear and between the two gymnasiums has been laid out for two swimming pools, each 75 feet in length.

Inasmuch as Amsterdam Avenue along the rear of the property is practically 50 feet lower than the front on Audubon Avenue, a part of this height being taken up with a solid rock ledge, makes it possible to have the swimming pool, together with the locker rooms, underneath the gymnasiums and at the same time many feet above the natural surface of the street.

The plot is unimproved largely because of its rugged contour and sharp slope toward the east with a sheer drop of the rock face of some 45 feet to Amsterdam avenue.



SECOND FLOOR PLAN.

Fig. 45—SECOND FLOOR PLAN.

These very peculiarities however have been made to lend themselves to the development of a plan which will utilize the difference in grade as spaces for locker rooms, two 75 foot swimming pools, each with a large open space for correction and instructional work, storage, etc., while the heating and ventilating plant will be at the lowest available level.

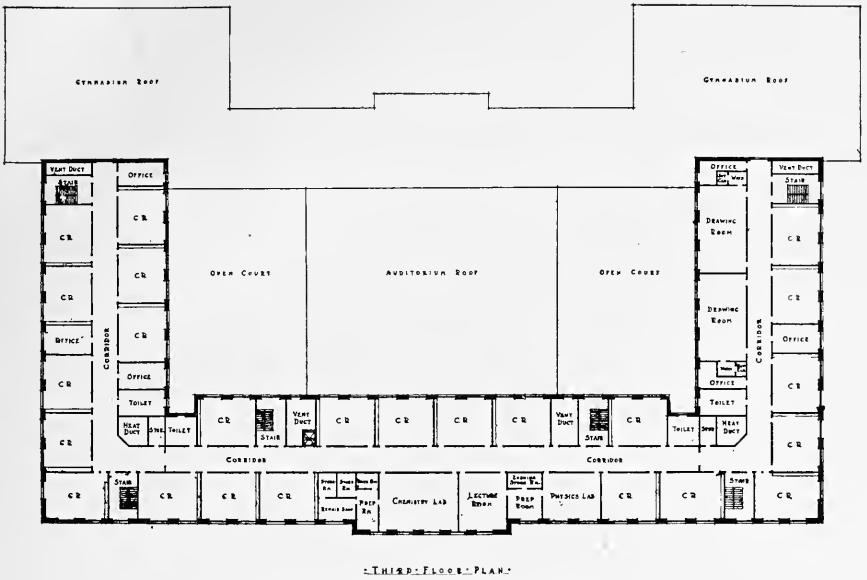


Fig. 46—THIRD FLOOR PLAN.

The cafeteria or lunch room will occupy the central part of the building on the fourth floor, the kitchen being placed on the floor above, with dumbwaiter service. This will make it possible to utilize the entire lunch room space for school purposes outside the lunch period.

The building differs from the other high schools in both design and plan, being four rather than five stories high at the front and about 100 feet greater in length.

GIRLS' COMMERCIAL HIGH SCHOOL.

It is proposed, I believe, to provide for the site and the construction of a building for the Girls' Commercial High School in the Borough of Brooklyn, which is now housed in inadequate and unsuitable, if not unsanitary, quarters in old Public School 42, St. Marks and Classon avenues. The excess pupils are distributed among various other buildings.

The site proposed is of such size as would make it possible perhaps to utilize the design and to a large extent the floor plans of the George Washington High School for the proposed new building. Indeed in layout and design this new building more nearly approaches the ideal than those which we have been obliged to plan on sites of the usual limited area.

SPECIAL ACTIVITIES AND OTHER NEEDS.

Mention has been made of the standardization which has been effected through the cooperation of the Board of Superintendents.

Its value from the standpoint of our Bureau arises from the fact that the requirements for each particular activity, for instance, is fixed and therefore known in advance of its being provided for in the plans and specifications.

Thus, when the recommendations for a building include, for instance, a domestic science room, the squad foreman of the draughtsmen in charge of the particular job turns at once to his "standards", and places before his men a plan as shown by the illustration, which indicates even to a new man a clear idea of what is required.

Feb. 20. 1918.

DOMESTIC SCIENCE DEPARTMENT

IN ELEMENTARY SCHOOLS.

SHOWING STANDARD EQUIPMENT.

CABINETS D. AND O; WARDROBE, TEACHERS LOCKER, COOKING BENCH, EXCEPT TOP AND GAS FITTING, DWARF PARTITIONS AND PIPE RAILINGS WILL BE IN GENERAL CONTRACT.

RANGES, SINKS, REFRIGERATORS, WASH TRAYS, TOP AND GAS FITTING OF COOKING BENCH AND PLUMBING OF BATH ROOM WILL BE IN, PLUMBING CONTRACT.

OTHER EQUIPMENT FURNITURE CONTRACT.

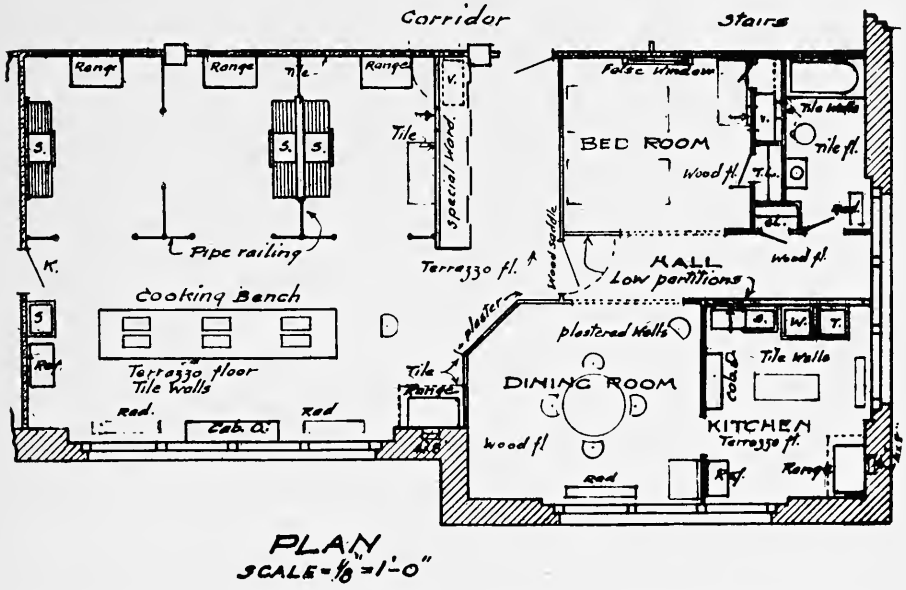


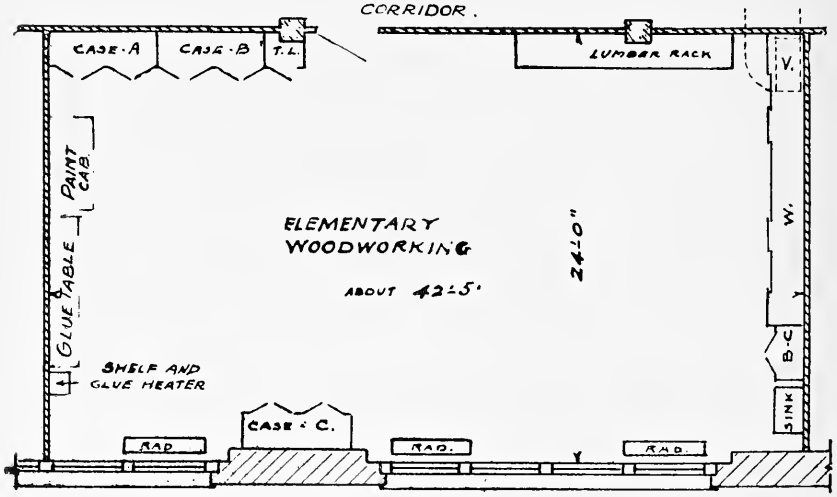
Fig. 47—STANDARD LAYOUT FOR DOMESTIC SCIENCE DEPARTMENT.

FEB. 19, 1918.

ELEMENTARY WOODWORKING SHOP.

IN ELEMENTARY SCHOOLS
SHOWING STANDARD EQUIPMENT.

CASES A, B, AND C, TEACHER'S LOCKER, WARDROBE, BOOK CABINET, AND LUMBER RACK WILL BE IN GENERAL CONTRACT.
SINK, GAS PLATE AND GAS PLATE SHELF WILL BE IN PLUMBING CONTRACT.
OTHER EQUIPMENT IN FURNITURE CONTRACT.



PLAN.

SCALE 1/8" = 1'-0"

REV 3/20/18
" 5/20/20.

Fig. 48—STANDARD LAYOUT FOR WOODWORKING ROOM IN AN ELEMENTARY SCHOOL.

LIBRARY

FEB. 11, 1918.

IN ELEMENTARY SCHOOLS

SHOWING STANDARD EQUIPMENT

THE WARDROBE, BOOK CABINET, TEACHER'S LOCKER AND BOOK STACKS WILL BE PROVIDED IN GENERAL CONSTRUCTION CONTRACT.

OTHER EQUIPMENT IN FURNITURE CONTRACT.

IF COLUMNS OCCUR BACK OF BOOK CABINET, SUCH CABINET SHOULD BE BROUGHT OUT FLUSH ON FRONT WITH WARDROBE.

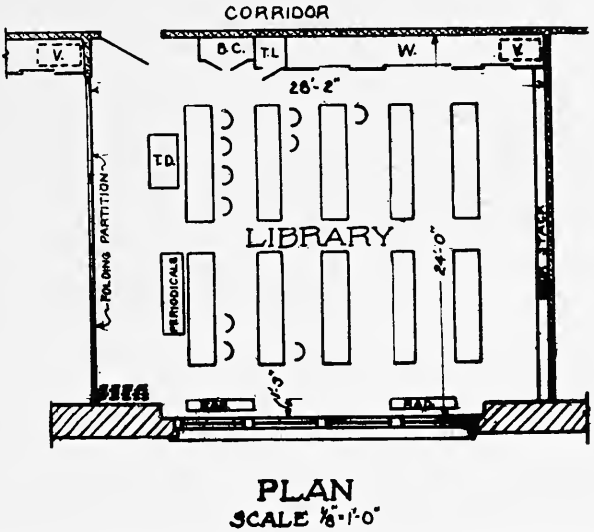


Fig. 49—STANDARD LAYOUT FOR LIBRARY IN AN ELEMENTARY SCHOOL.

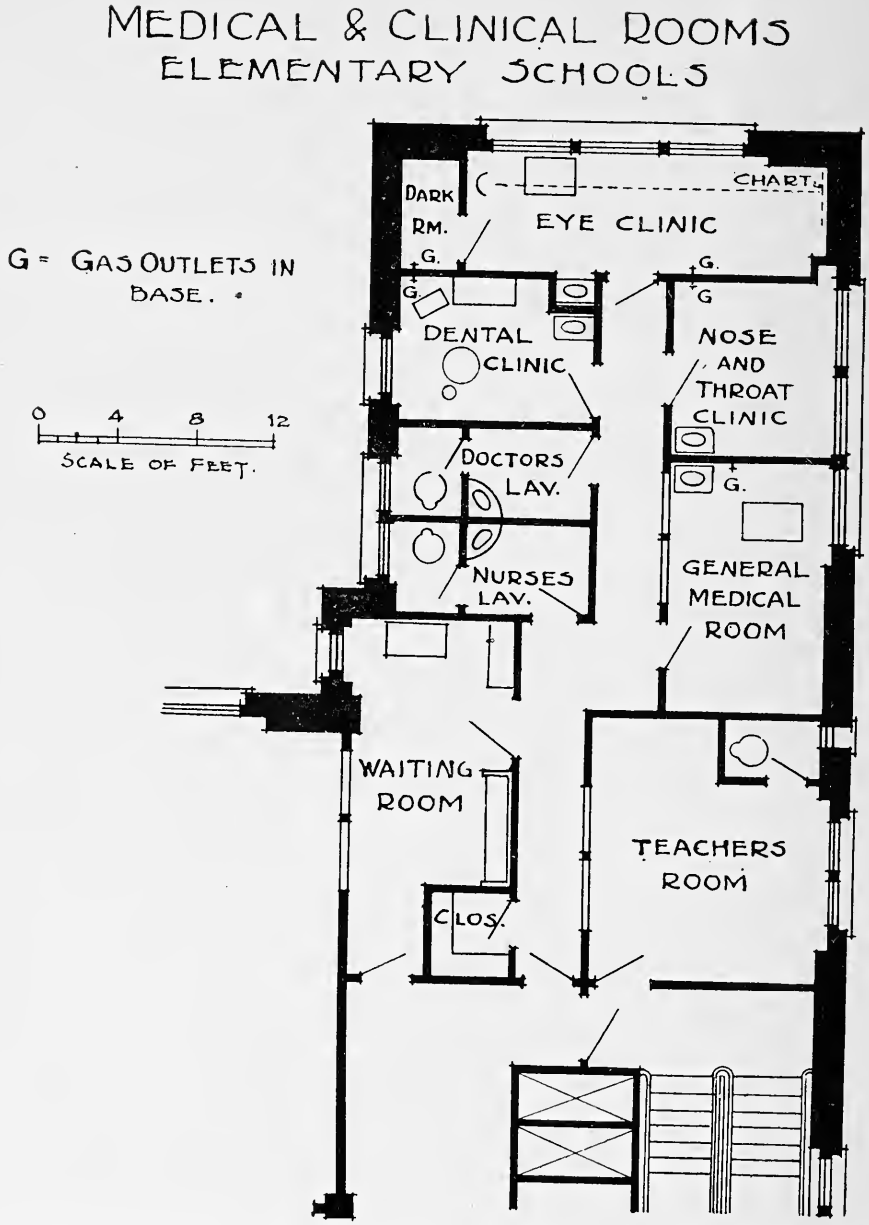


Fig. 50—STANDARD LAYOUT FOR MEDICAL ROOMS, IN WHICH DISPOSITION OF SPACE IS SUCH THAT THE ENTIRE AREA IS THAT OF A CLASSROOM UNIT.

Note position of desk and card index for nurse at the door of the waiting room leading to the medical rooms. All partitions extend to the ceiling and are of sound-proof construction. Note that the central hallway exit leads directly into the school hall so that the patients do not pass through the waiting room.

The teachers' rooms, indicated on the drawing, is no part of the layout, it having occupied that position in the building proper at the time the drawing was made.

This same method extends to the sanitary, the electric and the heating sections, each being at once aware of the requirements, thus doing away with the loss of time necessary in securing information.

Revision is made from time to time to suit the wishes of the Superintendent of Schools or the Board of Superintendents, in which event each section receives notice together with a new standard drawing.

Illustrations have been included showing the standards for a wood-working shop in an elementary school, a library and a medical room.

This has been extended to include not only the requirements as shown by a plan, but the equipment as well.

PROCEDURE IN THE PREPARATION OF THE SCHOOL BUILDING BUDGET.

LETTING OF CONTRACTS, ALL WORK.

SUGGESTIONS.

Inquiry is made from time to time as to the reason for the taking of what is considered as an excessive length of time in the securing of a new school or in the letting of contracts, as compared with what might be accomplished if such an enterprise were to be undertaken by a private corporation.

The desired information has therefore been included as forming an essential part of the general subject and may be briefly outlined as follows:

The request by the Board of Education for funds with which to purchase sites, construct and equip new public schools and additions, is based upon recommendations made by the Board of Superintendents.

The data is prepared, under the direction of the Superintendent of Schools, by one of the Associate Superintendents, and supplies in the greatest detail complete information as to the reason for the recommendation of each particular item, together with an approximate cost for each building or for the improvement of each site for playground or other purpose. This is considered by the Board of Education, either through its Committee on Buildings and Sites, or sitting as a Committee of the

Whole, or both. Upon final revision and approval it is forwarded to the Board of Estimate and Apportionment. The order in which this takes place may be scheduled as follows:

(1) Instructions issued by the Superintendent of Schools to prepare Building Program, known as the Corporate Stock Budget.
(2) Preparation of data by Associate Superintendent.
(3) Consideration by Board of Superintendents.
(4) Consideration by Committee on Buildings and Sites of the Board of Education, or
(5) By the Board sitting as a Committee of the Whole.
(6) Approval by the Board of Education.
(7) Forwarded by Secretary to Board of Estimate and Apportionment.
(8) Reference by that Board to the Committee on Finance and Budget.
(9) Examination by its engineers.
(10) Report by engineers to Committee on Finance and Budget.
(11) Action by said Committee.
(12) Action by Board of Estimate and Apportionment.
(13) Notice to the Secretary of the Board of Education.
(14) Report of Associate Superintendent to the Board of Superintendents as to the requirements of any particular building—number of rooms, grades, etc.
(15) Action by Board of Superintendents.
(16) Report to the Board of Education. Consideration by Committee on Buildings and Sites.
(17) Approval by said Board.
(18) Copy forwarded by Secretary to Superintendent of School Buildings.
(19) Obtaining of the building survey, and
(20) Consideration by the Superintendent of School Buildings as to what plan would best meet the requirements.
(21) Preparation of plans in the drafting room.

(22) Submission of preliminary design to the Art Commission.

(23) At completion of drawings, submission for final approval, to the Art Commission.

(24) Submission and approval of Bureau of Buildings in the borough in which the job is located.

(25) If plumbing, gasfitting and electric work are included, submission to the Department of Water Supply, Gas and Electricity.

(26) Preparation and printing of specifications.

(27) Submission to and approval by Board of Education.

(28) Forwarding of notice of such approval or resolutions by the Secretary of the Board to the Board of Estimate and Apportionment.

(29) Reference to Committee of the Whole.

(30) Reference to engineers of said Committee.

(31) Examination by engineers.

(32) Report back to the Committee of the Whole.

(33) Action by said Committee.

(34) Action by Board of Estimate and Apportionment.

(35) Notice to Secretary of Board of Education.

(36) Notice from Secretary to the Superintendent of School Buildings.

(37) Submission to the Corporation Counsel for approval of form of contract and advertisement.

(38) Filing in the office of the "City Record" and advertising for ten days.

(39) Opening of bids by Superintendent of School Buildings.

(40) Report to Board of Education.

(41) Making of award.

(42) Notification to the Comptroller for the approval of sureties.

(43) Then returned to the Board of Education.

(44) Surety bonds attached.

(45) Contract signed.

(46) To Auditor for recording.

(47) Then its return to the Comptroller for his final approval.

(48) Notice of which is received, and

(49) Conveyed to Deputy Superintendents.

(50) Notice to the contractor to begin work.

There are at least these important points which should be noted:

FIRST: Publicity and opportunity for consideration at any point in the entire proceedings.

SECOND: Each step is either required by Law or ordinance, or is the result of years of experience in the transaction of public business and has thus become a fixed practice.

THIRD: Accuracy is absolutely essential at all times, since an error would have most serious results.

FOURTH: Award of contracts *must* be made to the lowest (financially) responsible bidder.

ALL OF THIS NECESSARILY REQUIRES TIME, and yet more time, in the event of the lowest bid being in excess of the approved estimate. In the latter case the Board of Education must either reject the bids or request the Board of Estimate and Apportionment to amend its approval of the estimated cost, which must then take the same form of procedure (see items 28 to 36, inclusive) as already outlined.

The equipment contracts for new buildings and improvements practically follow the order of procedure as indicated by Items 20 to 50, inclusive.

It must be quite clear that private work parallels but a very few of the fifty items or steps and duplicates only about five. Moreover, in private practice the award may be made as may seem best, not of necessity to the lowest bidder, but to any bidder or to none at all, the job being simply given out on some form of a cost plus basis. Speed in construction then becomes only a question of expenditure of funds.

The same elaborate procedure must be followed in connection with all contracts for equipment, for maintenance, for fire protection and for every job for which the estimated cost is $1,000 or more.

The construction of a new roof or the building of a stairway, provision for which has been made in the Budget, requires that the plans and specifications must be prepared, printed, approved, etc., etc., in just the same manner as is required for a new building.

Further, the work of the Board of Education is upon precisely the same footing as that of private parties so far as the approval of the various Building Bureaus and of the Department of Water Supply, Gas and Electricity is concerned, and has the same rights of appeal, but in addition its work is also subject to action of the Board of Estimate and Apportionment and of the Art Commission, from the decision on which, if adverse, there is no appeal.

ARTIFICIAL ILLUMINATION

This subject is one of ever increasing importance.

It has been proven time and time again that our standard type of nine unit open bottom reflector equipment for classroom work was satisfactory if the Department of Water Supply, Gas and Electricity would provide proper type and size of incandescent lamps, otherwise there were well founded complaints.

This condition is even made more serious in evening schools because of the failure of that Department to provide a small reserve supply to replace burned out lamps, necessitating the waiting of a number of days before new lamps could be put in place.

We have made constant efforts to have that Department recognize the importance of both these matters and have finally succeeded in obtaining an improvement through its providing larger lamps, and also a small reserve supply.

Notwithstanding the handicap that the schools suffer because of the lack of authority or control of the artificial illumination of schools not being under the Board of Education, we have

proceeded to improve illumination, especially in new buildings, keeping abreast insofar as is practical with progress being made, not only to insure better illumination but greater economy in installation.

To this end a study has been made along the lines of using in the classrooms fewer units with larger size lamps which with the improved type of enclosing glassware maintains the intrinsic brilliancy of the larger units without materially sacrificing the efficiency, within workable limits insofar as glare is concerned.

These improvements were first undertaken in some of the older buildings in which there was an obsolete type of fixture.

The plans thus presented to the Department of Water Supply, Gas and Electricity were approved in only a few instances, together with the agreement that it would provide the proper size of incandescent lamps in order to insure the success of the installation.

The reasons given for the apparent reluctance to approve the improved types of illumination or to supply lamps of correct type and adequate candle power, is lack of sufficient appropriations.

There are two principal needs of the schools for adequate artificial illumination.

The first in importance, because it affects several hundred thousand of our children, is the need of the day schools, in which the lengthened school day, and in very many cases the nearness of adjacent buildings, renders artificial illumination just as much an absolute necessity during the short or dark days of the fall, winter and spring months as it is in the business or manufacturing world in general.

The second need arises from the use of the buildings for evening schools, lectures, recreation, neighborhood, or the various other purposes to which they are readily adapted.

It is proper to direct attention to the fact that these buildings together with their sites and equipment represent an investment of hundreds of millions of dollars by the people of the community, but that the full use and enjoyment thereof is

curtailed, if not prevented, if there be failure to provide adequate lighting so that they may be cheerful and inviting, rather than dark, dingy and forbidding.

Further, there is no need even to advertise their existence in the neighborhood through a more or less generous outside display, as experience shows that they will compete quite successfully with anything else if the interior be made attractively bright.

It should not be forgotten that the tremendous extravagance in the use of electric illumination by private interests in the successful effort to interest the public is made possible only through the approval and encouragement of this same general public, which in one way or another, unknowingly perhaps, meets the cost.

The schools of course want nothing of the kind, but the inference seems to be quite plain tthat if the matter be properly understood by the public there will be no lack of appropriations to bring the lighting of the schools up to any reasonable requirement.

FIRE PREVENTION WORK

This work was first seriously undertaken in 1904 when the Board of Estimate and Apportionment appropriated $300,000 for fire escapes and $550,000 for permanent betterments.

The work thus started has been carried forward as appropriations from time to time have been made available. The appropriations total a sum of $3,450,000.00.

On April 7th of this year the Board of Estimate and Apportionment made a further grant of $500,000. The work to be undertaken was that of removing fire hazards—the importance of which in some quarters have been greatly exaggerated and in others belittled.

The facts are that the work to be undertaken will be largely in the nature of betterments and improvements and will not only contribute to greater comfort in the use of the various premises, but will also cut down losses in the event of fire.

It has been my practice for several years to include in my annual report, which is printed in the early part of each year in the journal of the Board, a list of the fire losses of the preceding year.

In my last report, which appears in Journal, 1922, pp. 677 to 681, inclusive, it is recorded that 39 fires occurred in the buildings during 1921, the total loss being $21,022.50.

In this I pointed out that:

> "An analysis of it will clearly show the very great advantage in having in each building a complete fire-fighting equipment of hand extinguishers. Underlying the whole, however, is the splendid showing made by the teachers and custodians in either extinguishing the fires or holding them in check until the firemen arrived on the scene and all this without confusion or panic in those cases where the fire occurred during school sessions. It is a record that well merits recognition."

Some of the equipment referred to was supplied from the more recent appropriation of the Board of Estimate and Apportionment of $250,000.00.

During the year 1920 there were 43 fires at a total loss of $20,070, and in the year 1919, 28 fires at a total loss of $12,799.00.

It is quite obvious that in many cases the property losses would have been very great were it not for the fire prevention work which had been carried out, and this should now be continued with a large force of men until all the requirements as agreed upon between the Board of Education and the Fire and Building Departments have been met.

HEATING AND VENTILATION

Since the return of the draughting section of the Heating and Ventilating Division to this bureau on the first of January last, an intensive study has been made along the lines of simplification and standardization.

It is believed that the work should closely parallel that known as "commercial", eliminating, in so far as is possible, all special appliances, fittings and equipment, which not only cost more than those which might be termed "standard" but also involve very great delay at times before deliveries can be obtained from the manufacturers.

This is caused by the fact that much of this material is not carried in stock by dealers, but is furnished only on special order.

Other studies have been made to bring about closer cooperation between the contractors for heating and those for construction and, in fact, all contractors on a building.

One of the causes of delay and friction has been the lack of cooperation in obtaining and putting into use of electrical power necessary for the carrying forward of various parts of the work. This power is required, perhaps, by several of the contractors on a building, and in the past this has given rise to difficulty in obtaining service from the electrical company; further trouble has been experienced because of the lack of pumping to keep the premises free from water under all circumstances; and last but not least has been the lack of artificial illumination at all times, so that all contractors affected might carry forward their work intelligently and in a good, workmanlike manner, in cellars or otherwise dark portions of the premises.

A remedy has been found in requiring that the general contractor, in order to further expedite his work as well as that of all equipment, "shall, during the progress of the work, provide "and maintain such temporary electrical connections and appli- "ances for lighting and power service as may be determined "upon by the Superintendent of School Buildings; he shall also "provide electric lighting in the basement and cellar portions "where such artificial light may be needed, and connect to such "motors and supply current therefor as may be required to keep "the premises free from water, not only for construction pur- "poses but for heat installation as well; he shall also provide "such electrical connections as may be needed for power pur- "poses by the various contractors for equipment, the cost, to- "gether with that for current consumed, to be paid for by such "equipment contractors as may make use of it."

Careful analyses of expense for this sort of service on various buildings shows that it is very small indeed. In one instance the current charge was only Six dollars for certain work re-

quired by an equipment contractor, but the various difficulties to be overcome in obtaining this power caused several months delay.

Another cause of friction and delay has been the inability of the heating contractor to set up and connect his radiation in the various classrooms until the general construction contractor had laid the finished floors.

Another feature of this is the constant complaints made of damage done to these floors in the handling of the radiators and the dirt and muss caused thereby.

This will be all avoided in the future and the work of all parties very much expedited through the putting in of a cement platform beneath the windows which will be of a height just above that of the finished floors, upon which the radiators may be set at any time to suit the convenience of the heating contractor, as these platforms are to be put in place simultaneously with the casting of the floor arches.

These are a few of the various matters which have been taken up, and at the same time the sections in the draughting room have been so reorganized as to make possible the letting of heating and ventilating contracts so as not to interfere with or delay those for construction.

NEW BUILDING—HALL OF THE BOARD OF EDUCATION

It is more and more apparent that a new headquarters building, sufficient in size to house the Board of Education, together with all its offices and bureaus, has become an imperative necessity.

The present building at 59th street and Park avenue was designed and built for the use of the Board of Education of what was then The City of New York, comprising what is now the Boroughs of Manhattan and The Bronx.

Even at that time the proposal was seriously entertained of acquiring the remaining portion of the Park avenue front at the corner of 58th street, as it was thought that the building would very shortly prove to be inadequate. No steps were

taken, however, to carry out this plan because of the consolidation of The Greater City which went into effect before the building was completed.

During the twenty-four years that have elapsed the school system has more than doubled in size, with the result that various officials of the supervisory and business bureaus and others who for convenience and efficiency in the transaction of business, should properly be together in one building, are scattered at various points in the city wherever accommodations could be secured.

The project of a new administrative building has been brought forward from time to time, the only practical result being that about two years ago sketches were prepared for a new Hall of the Board on the plot of ground occupied by Public School 18 in East 51st street just west of Lexington avenue, which because of changes in neighborhood conditions was recommended for abandonment. It was considered necessary, however, to continue this school and the matter has been held in abeyance.

Would it not be best, therefore, instead of waiting for something to develop which might make possible the use of this plot or the purchase of some other site with the resultant delay, to consider the desirability of at once requesting the municipal authorities to provide a site for a new building for the Hall of the Board of Education on some unused portion of the Court house property and of providing funds for the construction of a plain, simple office building of sufficient size to meet all the needs of the department.

THE SELECTION OF SCHOOL SITES

It will have been noted perhaps that the schedule of some fifty different steps in the handling of the work prior to the actual construction period does not mention the subject of sites. This important matter will be covered by the report of Dr. Edward B. Shallow, but it would seem that many of the vexations and delays which occur in the selection and acquisition could be eliminated for at least a part of the city, if public school sites could be considered as a part of the City Plan.

It has apparently always been and is now largely the custom through force of circumstances to postpone the selection and acquisition of a school site until it be actually required and then to sin against this and future generations in not obtaining those of a size sufficient to provide not only the playground for the school itself but for the entire neighborhood as well.

Very great liberality—for the City of New York—is now being shown in the acquisition of sites of greater area than it has heretofore been possible to obtain.

Liberal school sites are wanted in the built up sections, where the absence of vacant land and the necessity therefore, of taking costly improved property, materially operates to limit the size of the school site.

Such considerations would not operate, however, if the subject of public school sites were considered as a part of the City plan, on precisely the same basis as streets.

Morever, the title should be so held that the property could not be disposed of simply because a shrinkage or withdrawal of school children from the neighborhood rendered a school building unnecessary. On the contrary, the buildings should be cleared away if not needed, and the site left as a playground or park space.

There does not appear to be a single instance during the last thirty years where the neighborhood would not have been greatly benefited by such a disposition of a school site no longer required for a school building.

The City plan as affecting thousands of acres of unimproved land within the City limits is in the making.

Taking as a background that which we know has taken place in this City, in the matter of growth of population and in the development of transit and other conveniences, it is not too much to assert that it is entirely feasible to lay out public school sites not only for elementary but for secondary schools and for public school athletic fields as well, coincident with that of the street plan in any undeveloped section so that they will be quickly available when required just as also are the streets and park spaces.

Experience also indicates that the selection and designation of a certain block of ground as a public school and playground site, and to be so used when required, would have a most excellent effect in stimulating the spreading out of the population and thus in time afford relief in the congested centres.

At present there is no possible way to ascertain where or when a school will be located and therefore people with children are loth to move to an undeveloped section.

It is quite obvious that there are many other advantages to be obtained for the people of the city if this plan be put into operation.

While it may be said that the proposition thus advocated is unusual and is not provided for by law, there is no valid reason why the law should not be changed to make the plan possible.

The preparation and adoption of such a plan would of course require a survey of population, transit and other data be made by the Board of Education and the recommendations arising from such study as to future needs be incorporated by the Board of Board of Estimate and Apportionment in the City plan for such territory as might be selected.

SALARIES AND PENSIONS OF EMPLOYEES

The very comprehensive and excellent plan which the Board of Education adopted on the subject of salaries for its Administration Employees, has worked out well, with the exception perhaps that no one at the time it was prepared realized that so far as draughtsmen at least were concerned it was not sufficiently elastic to meet the fluctuations in supply and demand.

The pension system seems to have little attraction for many of the men, who follow the principle of working whenever they can at the moment obtain the highest pay and therefore do not contemplate remaining in the service any great length of time.

Some of these are most excellent craftsmen having had both training and broad experience. Very often after they have proved their value to us they resign when architects in private

practice, who know their ability, make them attractive offers. This also in a measure applies to some of our men who have grown valuable to us because of length of service and training.

It therefore would seem that some way should be found by which the Board would be free to change its schedules or rules so as to exempt certain men under certain conditions, limiting their term of service to a given number of weeks or months as might be required.

In private work the men are employed at whatever price seems necessary and then dropped as soon as the job is out of the way. In this way the architect gets the pick of the men at no greater cost in the end. It may be, however, that there is a certain incompatibility as between private and public employment with the limitations set upon the latter by the Civil Service laws as well as the requirements of other bodies. The need of some remedy to meet the situation as above outlined nevertheless remains.

Stillman Appellate Printing Company
200 William Street,
New York City.

LIBRARY OF CONGRESS
0 029 452 317 0